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"Western Treasure -- Deep, Wet Snow"

FEDERAL-STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION WATER FORECASTS

FOR OREGON

APRIL 1, 1948

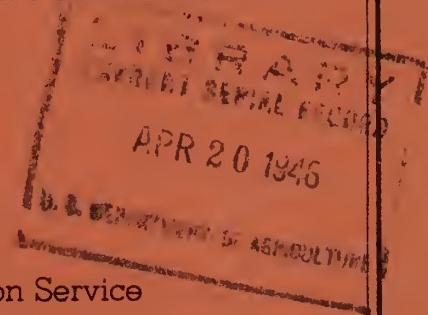
By

Division of Irrigation, Soil Conservation Service

United States Department of Agriculture

and

Oregon Agricultural Experiment Station



Data included in this report were obtained by the agencies named above in cooperation with the Oregon State Engineer, U. S. Forest Service, National Park Service and other Federal, State and local organizations.

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FOR
OREGON

Report Prepared
by
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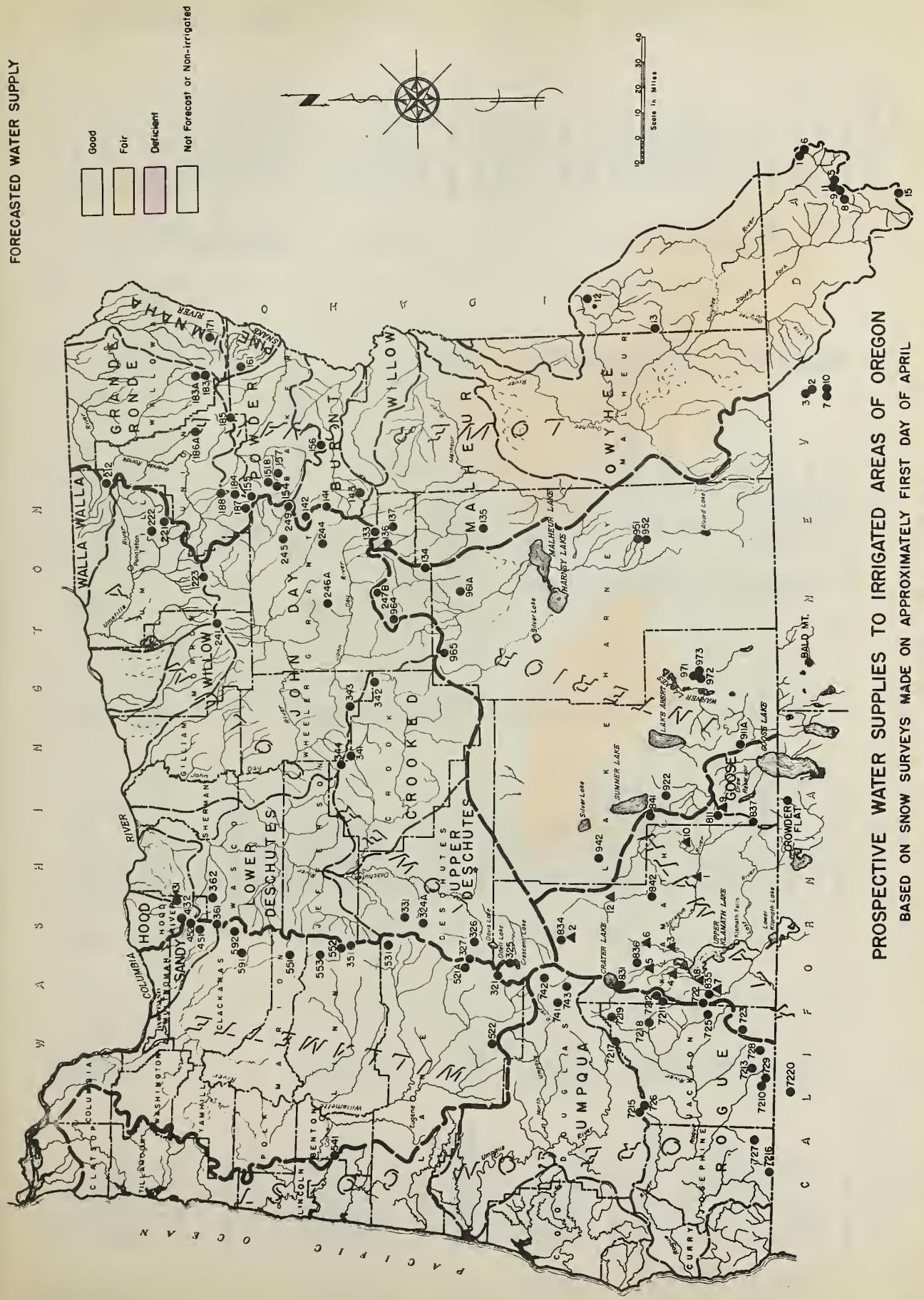
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FORECASTED WATER SUPPLY



**PROSPECTIVE WATER SUPPLIES TO IRRIGATED AREAS OF OREGON
BASED ON SNOW SURVEYS MADE ON APPROXIMATELY FIRST DAY OF APRIL**

A Day-Early Adolescent Economic Behavior Model Not Necessarily Included

INDEX TO SNOW COURSES

Name	Elev.	Number	Name	Elev.	Number	Name	Elev.
UPPER COLUMBIA DRAINAGE							
Lower Snake in Oregon			WALLA WALLA RIVER			WILLAMETTE RIVER	
ONYHEE RIVER			WALLA WALLA RIVER			WILLAMETTE RIVER	
Big Bend	6800	212	Tollgate	5070	551	Breitenbush	2325
Buckskin, Lower	6800				321	Cascade Summit	2,880
Buckskin, Upper	8200				522	Charlton Lake	4,500
Fish Creek	7900				327	Hog Pass	5,750
Fry Canyon	6800	222	Emigrant Springs	3925	351	Marion Forks	4,755
Granite Peak	6600	223	Lucky Strike	5050	553	Mary's Peak	4,800
Jack Creek, Lower	8600	221	Meacham	4,300	541	Santiam Junction	2,730
Jack Creek, Upper	7000	212	Tollgate	5070	552	Waldo Lake	3,620
Martin Creek	7800				521A	KLAMATH LAKE BASIN	2,990
Rodeo Flat	7000	241	Arbuckle Mountain	5,400	831	Annie Spring	6,018
Silver City	6400				722	Billie Creek Divide	6,000
Silveries	6900				834	Chemalt No. 1	4,760
South Mountain No. 22	6340				834	Crowder Flat	5,200
Taylor Canyon	5200				723	Hyatt Prairie Reservoir	9,900
MALHEUR RIVER					835	Lake of the Woods No. 1	4,960
Blue Mountain Spring	5,33				721	Quartz Mountain	5,320
Crane Prairie	5,37				721	Seven Lakes No. 1	6,800
Lake Creek	5,36				7212	Seven Lakes No. 2	6,200
Rock Spring	5,34				837	Strawberry	5,600
Stinking Water	5,35				841	Summer Rim	7,200
BURNT RIVER					836	Sun Mountain	5,350
Barney Creek	5,43				842	Taylor Butte	5,100
Blue Mountain Summit	5,51				521A	GOOSE LAKE BASIN	6,720
Dooley Mountain	5,56				911A	Camas Creek	6,480
Tipton	5,42				811	Quartz Mountain	5,720
POWDER RIVER					837	Strawberry	5,320
Anthony Lake	7,125				911A	Camas Creek	5,600
Bourne	5,800				526	Clear Lake	5,750
Dooley Mountain	5,54				327	Charlton Lake	3,61
Ellartson Meadows	5,40				327	Clear Lake	3,500
Cold Center	2,69				325	Greenet Lake	4,760
Goodrich Lake	5,57				343	Derr	5,670
Summit Springs	1,84				351	Hogg Pass	4,755
Taylor Creek	4,85				344	Marks Creek	4,540
PINE CREEK					324A	New Dutchman Flat	6,400
Schneider Meadows	5,40				324	Oahoo Meadows	5,200
INNAHA RIVER	161				362	Rock Creek	4,200
Coverdale		4,250			965	Snow Mountain	6,300
					342	Tamarack	4,800
					331	Three Greeks Meadows	5,600
HOOD RIVER					HOOD RIVER		
					4,31	Brooks Meadows	4,300
					432	Tilly Jane-Mt. Hood	6,000
					1	Beatty	4,300
					2	Chemalt	4,761
					3	Chiloquin	4,187
					4	Crystal	4,200
					5	Fort Klamath	4,150
					6	Kirk	4,533
					7	Lake of the Woods	4,960
					8	Pelican	4,200
					9	Quartz Mountain	5,504
					10	Richardson Ranch	4,800
					12	Yansey	4,600
					292	Clackamas Lake	3,400
					291	Pearine Ridge	3,500
					9	QUARTZ LAKE BASIN	9
						Quartz Mountain	

April 1, 1948

FINAL WATER SUPPLY OUTLOOK

Oregon's 1948 water supply outlook has improved greatly since February 1 and will be nearly comparable to the good water year of 1946 in many areas. 97 percent of all irrigated lands have in sight "good" to "fair" water supplies with the best supplies provided from reservoired water. Greatly "deficient" supplies are not expected to occur in any section of the state, but there will be some late season shortages in some areas.

Mountain snow cover is now above average on 71 percent of all measured snow courses and is greater than last year at all stations. On 43 percent of the courses the surveys recorded more snow than in the good water year of 1946. Snow-stored water now present above 5,000 feet elevation is 9 percent greater than average and 55 percent greater than last year, while between 2,000 and 5,000 feet it is 34 percent greater than average and over 3 times greater than at this date last year. Snow and water supplies for individual streams are discussed in detail beginning on page 17.

Watershed soils are much wetter than average -- literally soaked, greatly favoring runoff from the snow-pack. Crop land soils are generally well wetted with moisture penetration in the dry wheat lands equalling that of the wet year 1943.

Total water stored in all reservoirs is about 20 percent less than last year, 23 percent less than in 1946 and 16 percent less than in 1945. Only 56 percent of the more important reservoirs are half full or better.

A tabulation of streamflow forecasts is presented on pages 2 and 3 of this report and detailed reports from the local water forecast committees are presented beginning on page 17.

Explanation of Water Forecast Map Preceding Page 1

The descriptive words indicate whether or not the prospective water supply for any given area is expected to be, by local standards, deficient, fair (generally adequate but somewhat short late in the season), or good for crop production on the usual acreage. The differences are shown in color on the map preceding page 1.

FINAL STREAMFLOW FORECASTS, April 1, 1948

The following summarized runoff forecasts are based on mountain snow cover and on the assumption that precipitation and temperature during the runoff season will be approximately normal. Appreciable deviations from normal of temperature and/or precipitation, especially during April, May or June, will correspondingly modify these forecasts.

BASIN AND STREAM	Apr.-Sept., inc. Streamflow in Thous. A. F.				
	Forecast		Measured Runoff		10-yr. avg.
	1948	1947	1946	1945	1937-46
NORTHCENTRAL OREGON					
Hood River, W. Fk. near Dee	175.0	a	164.7	149.8	137.1
White R. below Tygh Valley	160.0	103.1	181.0	119.3	130.8
UMATILLA-WALLA WALLA					
Walla Walla R. So. Fk. nr. Milton	79.0	a	75.0	69.8	62.7
McKay Ck. above McKay Reservoir	31.0	a	20.9	34.5	26.9
Umatilla R. near Gibbon	110.0	a	103.5	94.2	78.8
Umatilla R. at Pendleton	200.0	a	194.0	188.7	153.9
NORTHEASTERN OREGON					
Wallowa R.E. Fk. plus Power Pl.	11.3	a	13.3	10.9	10.7
Hurricane Ck. near Joseph	44.5	a	54.3	41.8	41.1
Lostine R. near Lostine	130.0	a	149.7	125.6	113.8
Bear Ck. near Wallowa	65.0	a	83.4	65.5	63.6
Grande Ronde R. nr. La Grande	220.0	a	179.6	168.4	155.8
Catherine Ck. near Union	80.0	a	76.0	69.0	65.2
Imnaha River at Imnaha	350.0	a	320.5	291.4	282.1
Powder River at Salisbury	60.0	a	76.4	54.6	57.4
Burnt R. nr. Hereford (Natural Flow)	40.0	a	-	33.6	34.3
EASTERN OREGON					
Malheur R. Mid. Fk. nr. Drewsey	40.0	34.1	83.6	80.4	75.7
Malheur R., N. Fk. at Beulah	36.0	a	68.9	53.6	60.2
Owyhee R. above Owyhee Reserv.	150.0	176.6	467.3	646.9	437.3
John Day R. at Prairie City, combined with Power Canal	45.0	38.6	62.2	46.6	46.4
John Day R., Mid. Fk. at Ritter	130.0	a	140.2	116.5	107.3
John Day R., No. Fk. near Dale	350.0	a	267.8	207.6	215.8
Strawberry Ck. nr. Prairie City	7.5	7.9	9.9	8.0	7.8
HARNEY BASIN					
Silvies R. near Burns	55.0	47.7	99.6	98.6	88.4



Streamflow Forecasts, April, 1948 (Cont'd.)

BASIN AND STREAM	Apr.-Sept., inc. Streamflow in Thous.A.F.				
	Forecast 1948	Measured Runoff		10-yr.avg. 1945 1937-46	
		1947	1946	1945	1937-46
<u>CENTRAL OREGON</u>					
Ochoco Reservoir Net Inflow	20.0	8.2	46.4	29.6	21.4
Crooked River nr. Post	150.0	a	137.3	136.2	111.0
Crescent Lake Net Inflow	17.0	19.2	22.2	11.1	13.2
Little Deschutes R.nr. Lapine	80.0	64.9	114.1	50.4	68.3
Odell Ck. near Crescent	31.0	28.8	32.6	24.1	24.8
Deschutes R. below Snow Creek	62.0	64.5	78.2	37.7	46.8
Crane Prairie Reservoir Inflow	110.0	a	153.6	86.0	97.5
Peschutes R. at Benham Falls	550.0	495.1	547.5	386.3	445.7
Tumalo Creek and C.S. Canal	45.0	a	60.9	38.5	42.8
Squaw Creek near Sisters	50.0	45.7	63.5	38.4	44.9
<u>SOUTHCENTRAL OREGON</u>					
Chewaucan R. near Paisley	60.0 ^b	32.9 ^b	78.3 ^b	65.3 ^b	66.0 ^b
Deep Creek above Adel	50.0 ^b	29.1 ^b	57.6 ^b	70.2 ^b	61.3 ^b
<u>KLAMATH BASIN</u>					
Sprague R. above Chiloquin	195.0	a	261.9	207.1	257.1
Williamson R. below Sprague R.	330.0	223.8	415.4	332.5	382.3
Upper Klamath Lake Net Inflow	421.0	318.2	557.0	409.9	495.2
Clear Lake Res. Net Inflow	14.0	-	-	-	41.2
Gerber Res. Net Inflow	6.0	-	-	-	21.4
<u>SOUTHERN OREGON</u>					
Applegate R. near Ruch	90.0	a	129.6	114.0	128.1
Hyatt Res. Net Inflow	6.0	a	5.5	5.8	5.8
Fourmile Lake Net Inflow	7.2	a	8.7	7.3	6.9
Little Butte Ck. N.Fk. below Fish Lake (Natural Flow)	14.0	a	15.7	13.8	13.4
Rogue R. So. Fk. above Imnaha Ck.	45.0	a	63.5	54.4	52.1
Rogue R. Mid. Fk. plus Power Canal	60.0	a	-	74.5	69.2
Rogue R. N.Fk. above Prospect	315.0	248.8	370.4	295.4	293.4
Rogue River below So. Fk.	645.0	a	735.4	656.4	636.8
Clearwater River above Trap Ck.	60.0	61.4	65.7	55.5	57.6
No. Umpqua R. below Lake Creek	155.0	157.0	179.1	148.6	147.6
No. Umpqua R. at Toketee Falls	360.0	348.4	407.3	348.1	341.7
<u>WILLAMETTE VALLEY</u>					
Willamette R., Mid. Fk, at Eula	900.0	a	830.3	889.2	749.5
McKenzie R. at McKenzie Bridge	560.0	a	595.2	533.9	516.4
McKenzie River near Vida	1170.0	a	1227.8	1230.8	1107.8
Clackamas R. at Big Bottom	170.0	a	176.9	145.1	150.6

a - 1947 Discharge record not available.

b - April - June rather than April - September.

COMPARISON OF SNOW COVER AS OF APRIL FIRST WITH THAT OF PREVIOUS YEARS

Snow-stored water now present above 5,000 feet:
 As percent of that present one month ago --- 136
 As percent of that present one year ago --- 155
 As percent of that present two years ago --- 76
 As percent of average --- 109

Snow-stored water now present from 2,000-5,000 feet:
 As percent of that present one month ago --- 146
 As percent of that present one year ago --- 545
 As percent of that present two years ago --- 71
 As percent of average --- 134

Water content of snow on all measured courses is greater than at this time in 1947, and in 43 percent of the comparisons, is greater than on about April 1 of 1946. Water content of snow on 71 percent of all measured courses is greater than average. The intent of the tabulation below is to show in a general way the relationship of April 1, 1948 snow cover to that of earlier years at a comparable date.

Year	Course	Bend	Big	Blue	Izze	John Day	John Day	Burnt	Harney-Halheur	Harney-Halheur	Water Content of Snow (Inches) as of About April 1												
											Powder	John Day	Grande Ronde	Walla Walla	Crooked River	Clackamas	William Diam.	Rogue	Klamath	Rogue	Billie Spring Creek	Divide	
1929											9.4					7.8	28.1	9.4c	20.5	20.8			
1930											4.1					0.6	10.0	3.5c	20.5	0.0			
1931											9.1	5.2				21.7	6.2	9.0c	26.1	13.1			
1932											22.3	N.R.	41.1	41.4	12.7	42.0	23.8c	25.6b	29.2d				
1933											22.4	N.R.	40.4 ^a	36.6	N.R.	43.3	35.0c	N.R.	31.3				
1934											N.R.	N.R.	27.2b	0.0	0.0	N.R.	1.4c	N.R.	-				
1935											19.2	11.0	10.5	32.5	41.3	12.6	36.0	10.2c	55.8	32.1			
1936											8.8	6.6	6.2	10.5	27.9	25.9	15.0	25.2	32.4	43.5	26.6		
1937											19.5	16.1	7.5	8.8	8.9	17.1	47.3	23.0	14.7	23.7	31.4	56.1	38.2
1938											11.4	23.4	6.2	6.2	6.0	11.1	30.1	29.8	7.6	23.5	38.5	61.9	26.4
1939											3.4	11.1	8.8	0.0	1.0	11.9	31.5	18.7	3.8	2.9	19.8	37.4	35.1
1940											3.8	9.7	9.8	3.1	2.8	10.3	28.4	12.1	4.6	0.0	11.4	44.1	9.4
1941											5.6	10.4	12.6	6.3	9.0	15.6	33.6	18.4	9.9	9.3	19.7	6.7	39.1
1942											15.3	21.8	10.6	12.2	22.6	43.1	24.6	13.1	35.5	38.4	51.3	31.9	19.3
1943											5.6	8.2	5.6	4.6	3.4	21.0	20.0	5.0	9.8	15.9	49.9	51.3	
1944											5.6	8.2	7.0	7.7	22.5	30.5	26.0	11.0	10.4	20.8	17.6	36.1	22.3
1945											12.1	14.1	7.0	8.9	11.3	20.6	44.1	38.9	16.4	24.8	43.9	69.3	36.6
1946											10.9	22.0	1.6	2.4	9.6	38.2	21.4	0.0	8.7	21.0	12.7	34.4	11.1
1947											3.6	10.4	10.1	9.2	15.4	36.4	34.0	11.5	18.9	34.2	25.6	46.9	29.0
1948											8.3	14.9	10.1	9.0	10.1	15.4	36.4	34.0	11.5	18.9	34.2	25.6	46.9

Underscored is least April 1 water content of snow of record period for each snow course shown.
 a - April 19. b - April 17 c - From Copco Water Station d - April 22 N.R. - No report

STATUS OF SNOW COVER AS OF APRIL FIRST

Summary of Snow Survey Data

By Watersheds as of About April First

Stream Basin	Number Of Snow Courses Averaged	average Water Depth in Snow Cover (Inches)				Yrs. of Avg. Past Yrs. of Record	Rec- ord	1948 Snow Water Depth (Inches) as Percent of that in		
		1948	1947	1946	1947			1947	1946	Avg.
Owyhee River	13	6.9	2.1					328		
	13	6.9		7.3					94	
	13	6.9			6.9	(6-13)				100
Malheur River	6	8.2	3.8					216		
	6	8.2		10.6					77	
	6	8.2			7.1	(3-18)				115
Burnt River	4	9.1	2.6					350		
	4	9.1		12.4					73	
	4	9.1			7.8	(3-15)				117
Powder River	8	19.6	15.1					130		
	7	17.4		19.9					87	
	7	17.4			15.1	(1-12)				115
Pine Creek	1	27.1	20.4					133		
	1	27.1		36.3					75	
	1	27.1			27.5	(10)				98
Imnaha River	3	27.8	22.5					124		
	3	27.8		31.9					87	
	3	27.8			23.6	(3-14)				118
Grande Ronde River	10	25.1	18.6					155		
	10	25.1		25.9					97	
	10	25.1			20.0	(6-19)				126
Walla Walla River	1	34.0	21.4					159		
	1	34.0		39.9					85	
	1	34.0			25.7	(17)				132
Umatilla River	4	18.0	8.0					225		
	4	18.0		19.7					91	
	4	18.0			12.5	(9-19)				144
Willow Creek	1	12.5	3.7					338		
	1	12.5		15.6					80	
	1	12.5			9.6	(19)				130
John Day River	10	14.5	7.6					191		
	10	14.5		16.0					91	
	10	14.5			10.3	(4-19)				141
Deschutes River	8	21.0	11.1					189		
	8	21.0		28.6					73	
	9	24.4			19.6	(3-19)				124
Crooked River	3	8.9	1.8					494		
	3	8.9		11.0					81	
	3	8.9			6.8	(4-19)				131
Hood River	1	14.1	1.6					681		
	1	14.1		20.3					69	
	1	14.1			8.8	(15)				160

Status of Snow Cover (Cont'd.)

Stream Basin	Number of Snow Courses Averaged	Average Water Depth in Snow Cover (Inches)				Yrs. Avg.Past Yrs.of Record	Yrs. of Rec- ord	1948 Snow Water Depth (Inches) as Percent of that in		
		1948	1947	1946	1947			1947	1946	Avg.
Sandy River	3	37.1	22.0					169		
	3	37.1		47.9					77	
	3	37.1			28.5	(11-16)				130
Clackamas River	1	19.1	8.7					220		
	2	16.0		21.0					76	
	2	16.0			13.5	(7-11)				118
Willamette River	7	27.8	14.9					186		
	9	27.3		38.6					71	
	9	27.3			19.5	(5-18)				140
Silver Lake Basin	1	0.0	0.0					0		
	1	0.0		3.4					0	
	1	0.0			1.0	(7)				0
Chewaucan River	1	4.9	1.3					377		
	1	4.9		11.0					44	
	1	4.9			5.2	(9)				94
Warner Lake	1	8.8	2.4					367		
	1	8.8		13.6					65	
	1	8.8			8.6	(9)				102
Guano Lake	2	4.0	0.0					400		
	2	4.0		4.0					100	
	2	4.0			4.2	(8)				95
Harney Basin	9	10.5	4.5					223		
	7	7.8		7.8					100	
	9	10.5			8.2	(4-17)				128
Umpqua River	4	28.0	11.4					246		
	3	25.7		35.0					73	
	4	28.0			19.4	(9-19)				144
Upper Rogue River	12	24.3	15.4					158		
	11	23.3		33.7					69	
	12	24.3			24.7	(4-17)				98
Applegate River	5	18.7	14.9					126		
	4	18.0		25.8					70	
	5	18.7			22.1	(6-13)				85
Illinois River	2	9.0	3.6					250		
	2	9.0		17.2					52	
	2	9.0			15.6	(11-12)				58
Klamath Lake Basin	23*	12.2	7.8					156		
	22*	12.4		20.9					59	
	23*	12.2			13.3	(4-21)				92
Goose Lake Basin	4*	6.5	1.3					500		
	3*	5.9		10.2					58	
	4*	6.5			5.0	(7-17)				130

* Including Copco water measurement stations.

STATUS OF RESERVOIR STORAGE, April 1, 1948

BASIN and STREAM	RESERVOIR	USABLE	THOUS.A.F.	IN STORAGE ABOUT APRIL 1.			10-yr.avg. 1937-46		
		CAPACITY (Thous.A.F.)	1948	1947	1946	1945			
<u>UPPER COLUMBIA DRAINAGE</u>									
<u>LOWER SNAKE IN OREGON</u>									
<u>Owyhee</u>	Antelope	36.5	N.R.	11.0	15.0	22.6	18.2		
	Owyhee	715.0	397.9	595.4	681.6	606.4	640.5		
<u>Malheur</u>	Warm Springs	191.0	40.9	135.3	141.1	90.1	135.8		
	Agency Valley	60.0	45.5	49.4	54.6	60.0	51.9		
	Willow Creek	26.0	8.0	N.R.	N.R.	13.0	7.1 ^d		
<u>Burnt</u>	Unity	25.2	12.0	24.0	14.8	13.0	16.2 ^e		
<u>Powder</u>	Thief Valley	17.4	17.8	17.8	18.1	17.4	17.1		
<u>Grande Ronde</u>	Wallowa Lake	40.9	17.8	24.4	12.2	12.0	21.1		
<u>LOWER COLUMBIA DRAINAGE</u>									
<u>Umatilla</u>	McKay	74.0	71.0	66.3	62.0	62.0	53.8		
	Cold Springs	50.0	50.0	50.0	49.0	42.0	46.5		
<u>Deschutes</u>	Ochoco	46.0	30.0	32.0	43.6	11.4	24.0		
	Crescent Lake	80.0	50.0	52.1	33.4	34.4	35.7		
	Crane Prairie	50.0	30.5	41.4	39.6	32.3	35.8		
	Wickiup	180.0	149.8	97.8	70.5	67.2	38.9 ^f		
	Rock Creek	1.4	1.4	1.4	1.4	0.8	1.1 ^g		
<u>Willamette</u>	Cottage Grove	30.1 ^b	19.9 ^b	20.6	16.2	17.1	17.7 ^f		
	Fern Ridge	94.2 ^b	65.0 ^b	68.0	56.5	62.2	51.2 ^h		
<u>INTERIOR DRAINAGE</u>									
<u>Silver Lake</u>	Thompson Valley	17.4	N.R.	8.2	4.0	2.3	7.1 ^f		
<u>WEST COAST DRAINAGE</u>									
<u>Rogue</u>	Fish Lake	7.7	3.6	4.6	4.2	4.0	5.0		
	Fourmile Lake ^a	16.0	2.4	5.1	5.7	8.6	8.0		
	Emigrant Gap	8.2	8.2	6.9	8.2	7.9	7.7		
	Hyatt Prairie ^a	16.0	3.8	3.4	4.2	4.0	7.4		
<u>Klamath</u>	Upper Klamath L.	584.0 ^c	389.3	407.8	385.1	366.1	454.1		
	Gerber	94.0	29.0	42.5	51.9	60.1	57.9		
	Clear Lake	440.2	152.4	226.7	282.4	284.0	261.9		
<u>Goose Lake</u>	Cottonwood	4.1	0.5	2.4	0.0	1.9	1.3 ⁱ		
	Drew	62.5	27.5	39.7	57.5	60.0	58.6		

N.R. - No Report

a - By ditch to Rogue River side From Klamath

f - 1943-1946

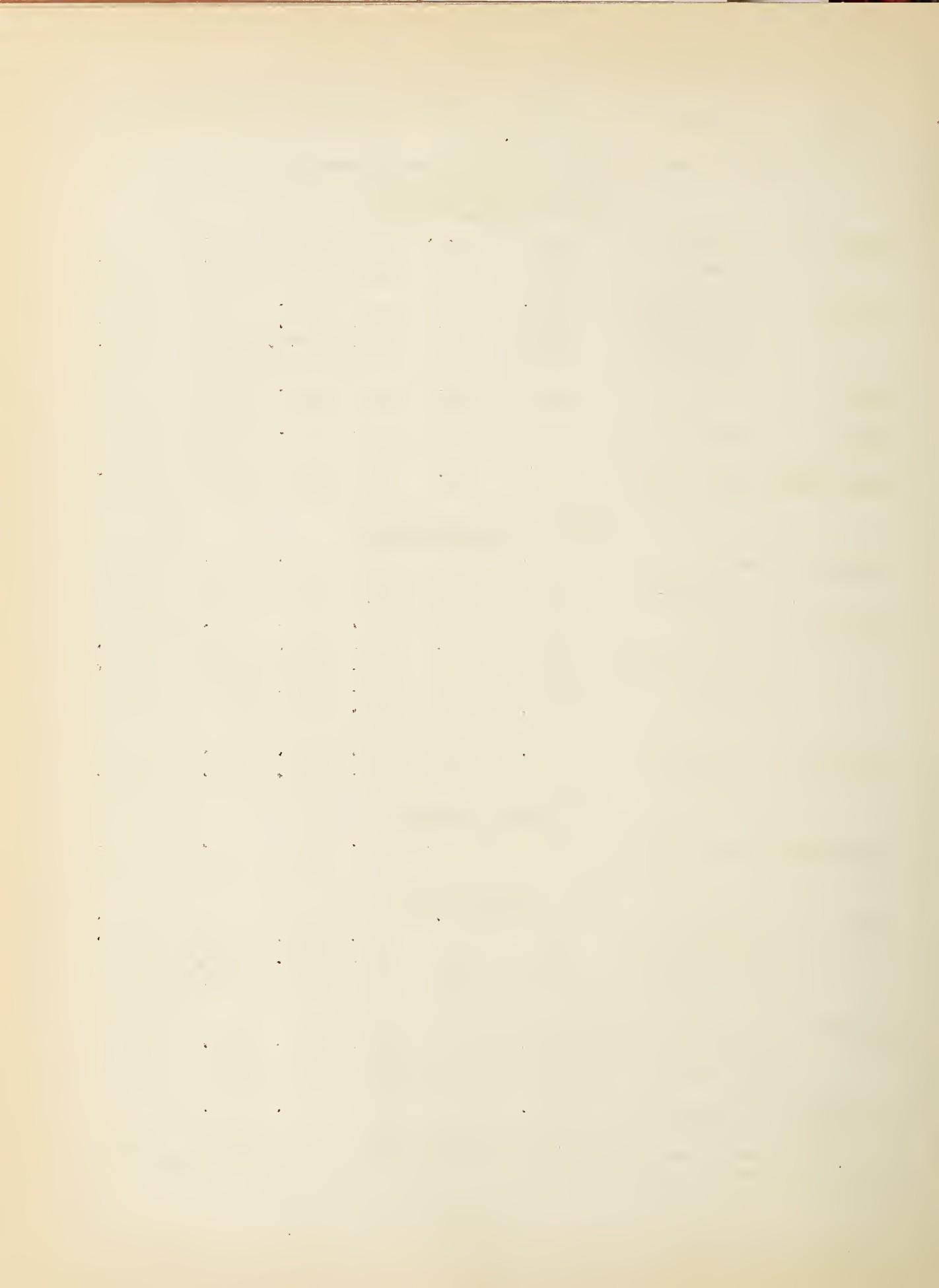
g - 1944-1946

Drainage h - 1942-1946

b - Storage space reserved for flood control i - Excl. '37, '38, '42.

c - Based on gage zero elevation of 4135.0

d - Excl. '41, '42, '46 e - 1938-1946



IMPORTANT OREGON RESERVOIRS



VALLEY PRECIPITATION^a

DIVISION	CURRENT YEAR		LAST YEAR	
	Oct. 1, 1947 - April 1, 1948	P	Oct. 1, 1946 - April 1, 1947	D
Southeastern	5.2	-1.4	6.1	-0.8
Southcentral	9.7	-0.8	9.6	-2.3
Northcentral	9.9	+2.2	7.8	-1.3
Columbia River	11.1	+2.5	7.9	-1.7
Wallowa Mountains	10.1	+0.4	9.3	-1.3
Blue Mountains	12.5	+1.6	13.2	+0.2
Southern	19.7	+1.7	16.6	-3.2
Willamette Valley	49.4	+8.9	44.6	+0.3

P = Precipitation (Inches)

D = Departure from Normal (Inches)

Southeastern: Southeastern Oregon range lands, Harney and Malheur Counties.

Southcentral: Southcentral Oregon range lands, Lake County and Klamath County, except the Cascade Mountains.

Northcentral: Northcentral Oregon wheat and range lands, Crook, Deschutes, Jefferson, Wheeler, and part of Grant Counties.

Columbia River: Columbia River area, wheat and range lands, Gilliam, Morrow, Sherman, Wasco, and part of Umatilla Counties.

Wallowa Mountains: Wallowa Mountain area, forest and range lands, Wallowa and part of Baker County.

Blue Mountains: Blue Mountain forest and range lands, Union, and parts of Baker, Grant, and Umatilla Counties.

Southern: Southern Oregon irrigated section, Jackson and Josephine Counties.

Willamette Valley: Parts of Polk, Benton, Yamhill, Washington and Lane, all of Linn, Marion, Clackamas and Multnomah Counties.

OREGON SNOW SURVEYS, APRIL, 1948

DRAINAGE BASIN and SNOW COURSE	Number or State Sec. • Twp. Range	Elev.	LOCATION						SNOW COVER MEASUREMENTS					
			U P P E R	C O L U M B I A	D R A I N A G E	L O W E R	S I L K E I N	O R E G O N	Date of Survey	Snow Depth (In.)	Water Content Same Approx., Date	Years of Record	Water Content AV. Water Content (Inches)	
ONYHEE RIVER														
Big Bend	Nev.	30	45N	56E	6800	4-4	28-4	8-3*	3-6	10-9	13	9-6		
Fry Canyon	Nev.	32	43N	54E	6800	4-5	23-2	7-9*	4-4	9-7	7	8-5		
Gold Ck. Ranger Sta.	Nev.	32	45N	56E	6600	4-4	16-3	5-8*	0-0	5-5	8	5-8		
Granite Peak	Nev.	27	44N	39E	8600	4-1	32-9	9-7*	7-2	18-0	8	14-8		
Lower Buckskin	Nev.	25	45N	39E	6800	4-2	30-2	10-2*	1-5	5-9	7	6-9		
Lower Jack Creek	Nev.	19	42N	53E	7000	4-3	1-2	4-7*	0-0	3-1	8	2-5		
Martin Creek	Nev.	24	44N	39E	7000	4-1	28-1	9-7*	1-1	6-0	7	6-7		
Midas	Nev.	18	39N	46E	7200	4-1	2-6	1-4*	0-0	1-2	7	2-0		
Rodeo Flat	Nev.	31	45N	54E	7000	4-5	27-0	9-1*	4-2	11-2	7	9-3		
South Mtn. No. 2	Idaho	35	7S	5W	6340	No Report		5-6	14-4	8	10-6			
Taylor Canyon	Nev.	32	39N	53E	5200	4-3	2-5	0-5*	0-0	3-5	7	3-4		
Tremewan Ranch	Nev.	4	29N	55E	5600	4-3	0-0	0-0*	0-0	0-0	6	0-1		
Upper Buckskin	Nev.	14	45N	39E	8200	4-2	30-6	10-4*	1-3	7-6	12	10-4		
Upper Jack Creek	Nev.	9	42N	53E	7800	4-3	37-1	11-6*	3-7	12-0	7	9-6		
MALHEUR RIVER														
Barney Creek	143	16	14S	36E	5950	3-31	31-2	8-8	5-2	11-2	3	7-9		
Blue Mtn. Springs	133	21	15S	35E	5900	4-1	4-1	14-9	10-4	22-0	18	11-2		
Crane Prairie	137	24	16S	34E	5375	3-31	27-1	10-2	2-4	10-8	10	7-0		
Lake Creek	136	10	16S	35-2E	5120	3-31	29-6	10-0	4-8	14-3	10	8-7		
Rock Spring	134	23	18S	32E	5100	3-31	16-0	5-0	0-0	5-1	12	4-1		
Stinkingwater	135	33	21S	34E	4800	4-1	Trace	Trace	0-0	0-0	10	0-6		

*Telegraphic - subject to revision

OREGON SNOW SURVEYS, APRIL, 1948

Dir. Long E. SSW and SNU. COURSE	Loc. Ticks Number or State Sec. Twp. Range	Elev.	SNOW COVER MEASUREMENTS					
			Date of Survey (In.)	Snow Depth (In.)	Same Approx. Date 1948	Years 1947	15±6	Past Record Record
BURNT RIVER								
Barney Creek	143	16	1±8	36E	5950	3-31	31±2	8.8
Blue Mtn. • Summit	141	6	12S	36E	5098	3-30	30±7	9.2
Dooley Mountain	156	32	11S	40E	5430	3-30	32±2	9.5
Tipton	1±2	3±2	10S	35½E	5100	4-5	20.5*	1.0
POWDER RIVER								
Anthony Lake	155	18	7S	37E	7125	3-31	87.0	31±4
Bourne	154	33	8S	37E	5800	3-31	16±2	15±4
Dooley Mountain	156	32	11S	40E	5±30	3-30	32±2	9.5
Eilertson Meadows	151B	18	8S	38E	5400	3-30	30±9	9.2
Gold Center	249	21	9S	36E	53±0	3-30	38±1	15±5
Goodrich Lake	157	34&35	8S	38E	6775	3-30	93±4	34±7
Summit Springs	184	9	6S	37E	6000	3-31	7±1	24±2
Taylor Green	185	3	6S	42E	5740	3-31	60.7	18.9
PINE CREEK								
Schneider Meadows	161	35	6S	45E	5400	3-30	82.6	27.1
IMNAHA RIVER								
Aneroid Lake No. 1	185	16	4S	45E	7480	3-27	108±2	38±4
Aneroid Lake No. 2	183A	16	4S	45E	7000	3-27	88±2	32±8
Coverdale	171	22	5S	47E	±250	3-22	±1.1	12.1
GRANDE RONDE RIVER								
Aneroid Lake No. 1	183	16	4S	45E	7480	3-27	108±2	38±2
Aneroid Lake No. 2	183A	16	4S	45E	7000	3-27	88±2	32±8
Anthony Lake	155	18	7S	37E	7125	3-31	87.0	31±4

* - Partly Estimated

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OREGON SNOW SURVEYS, APRIL, 1948

DRAINAGE BASIN and SNOW COURSE	LOCATION				SNOW COVER MEASUREMENTS				Same Approx. Date	Water Content (In.)	Past Record	
	Number or State	Sec.	Twp.	Elev.	Date of Survey	Snow Depth (In.)	1948	1947				
GRANDE RONDE RIVER (Cont'd.)												
Beaver Reservoir	188	8	5S	57E	5340	3-31	48•4	48•8	8•2	-	8	10•2
Camp Carson	187	33	6S	36E	5970	3-29	43•0	13•6	5•8	10•3	9	8•5
Meacham	221	24&25	1S	35E	4300	3-29	35•4	12•9	0•5	13•1	19	7•8
Moss Spring	186A	28	3S	41E	5850	3-30	9•1	29•7	18•5	27•1	10	23•5
Summit Springs	184	9	6S	37E	6000	3-31	79•1	24•2	21•8	20•5	12	20•9
Taylor Green	185	3	6S	42E	5740	3-31	60•7	18•9	11•6	21•4	10	14•9
Tollgate	212	32	4N	38E	5070	3-29	89•4	34•0	21•4	39•9	17	25•7
		L O W E R	C O L U M B I A	D R A I N A G E								
Tollgate	212	32	4N	38E	5070	3-29	89•4	34•0	21•4	39•9	17	25•7
WALLA WALLA RIVER												
Umatilla River												
Emigrant Springs	222	29	1N	35E	3925	3-29	25•5	9•9	0•0	9•5	19	5•2
Lucky Strike	223	28	3S	32E	5050	3-27	51•0	15•3	10•0	16•4	9	11•4
Meacham	221	24&25	1S	35E	4300	3-29	35•4	12•9	0•5	13•1	19	7•8
Tollgate	212	32	4N	38E	5070	3-29	89•4	34•0	21•4	39•9	17	25•7
WILLOW CREEK												
Arbuckle Mountain	241	33	4S	29E	5400	3-26	43•2	12•5	3•7	15•6	19	9•6
JOHN DAY RIVER												
Arbuckle Mountain	241	33	4S	29E	5400	3-26	43•2	12•5	3•7	15•6	19	9•6
Beech Creek Summit	246A	4	12S	30E	4800	3-30	17•4	6•0	0•0	7•0	11	4•5
Blue Mountain Springs	133	21	15S	35E	5900	4-1	4•1	14•9	10•4	22•0	18	14•2

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OREGON SNOW SURVEYS, APRIL, 1948

LOCATIÖN

DRAINAGE BASIN and SNOW COURSE		LOCATION		SNOW COVER MEASUREMENTS						
Number or State	COURSE	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	Water Content (In.)	Years of Record	Past Record
JOHN DAY (Cont'd.)										
Blue Mountain	Summit	141	6	12S	36E	5098	3-30	30.7	9.2	2.4
Dixie Springs		244	28	11S	34E	6650	3-29	72.1	24.1	31.1
Gold Center		249	21	9S	36E	5340	3-30	38.1	13.5	1±.6
Izze Summit		964	28	16S	29E	5293	2-29	28.0	10.1	1.6
Olive Lake		245	14	9S	33 $\frac{1}{2}$ E	6000	3-29	63.4	30.0	19.7
Snow Mountain		965	1	19S	26E	6300	3-28	49.6	19.0	9.7
Starr Ridge		247B	20	15S	31E	5150	3-29	16.8	5.9	0.3
DESCHUTES RIVER										
Caldwell Ranch		326	30	21S	8E	4400	3-29	22.5	7.7	Trace
Cascado Summit		321	7	23S	6E	4880	3-25	97.2	3±.2	21.0
Clear Lake		361	29	4S	9E	3500	3-27	44.7	15.4	1.4
Crescent Lake		325	11	24S	6E	4760	3-25	26.0	12.0	0.0
Derr		343	14	13S	23E	5670	3-31	+0.6	12.1	0.0
Elk Lake		328	5	19S	8E	4850	4-1	75.1	30.5	11.5
Hogg Pass		351	24	13S	7 $\frac{1}{2}$ E	4755	3-31	111.5	+5.8	59.±
Marks Creek		344	25	12S	19E	4540	3-29	7.2	2.8	0.0
New Dutchman Flat		324A	21	18S	9E	6400	4-2	127.0	52.2	-
Ochoco Meadows		341	21	13S	20E	5200	3-31	34.0	11.5	0.0
Rock Creek		362	1	4S	10E	4200	3-29	39.5	13.6	6.2
Snow Mountain		965	1	19S	26E	6300	3-28	49.6	19.0	9.7
Three Creeks Mdw.		331	3	17S	9E	5600	3-26	56.9	19.9	14.5
Windigo Pass		744	20	25S	6E	5800	3-27	118.4	+3.6	31.0
HOOD RIVER										
Brooks Meadow		431	2	2S	10E	4300	4-4	107.8	45.5	1.6
Red Hi 11		434	21	1S	9E	4400	3-28	107.±	107.0	1.6
Tilly Jane-Mt. Hood		432	15	2S	9E	6000	4-4	107.8	45.5	1.6

OREGON SNOW SURVEYS, APRIL, 1948

DRainage Basin and SNOW COURSE	Number or State Sec.	Twp.	Range	Elev.	SNow COVER MEASUREMENTS			
					Date of Survey (In.)	Snow Depth	Same approx. Date 1947	Past Record 1946
13								
SANDY RIVER								
Clear Lake	361	29	2S	9E	3500	3-27 \pm .7	15-4 \pm .2	18-4 \pm .2
Phlox Pt.-Mt. Hood	452	6	3S	9E	5600	3-26 \pm .2	68-7 \pm .2	90-9 \pm .5
Still Creek	451	25	3S	8 $\frac{1}{2}$ E	3700	3-26 \pm .9	26-3 \pm .5	3-5 \pm .5
CLACKAMAS RIVER								
Clackamas Lake	592	35	5S	8 $\frac{1}{2}$ E	3400	4-1 \pm .1	36-0 \pm .5	13-0 \pm .9
Peavine Ridge	591	1 $\frac{1}{2}$ &15	6S	7 $\frac{1}{2}$ E	3500	- \pm .1	51-5 \pm .5	8-7 \pm .9
WILLAMETTE RIVER								
Breitenbush	551	21	9S	7E	2325	5-27 \pm .2	13-2 \pm .2	4-6 \pm .6
Cascade Summit	321	7	23S	6E	4880	3-25 \pm .2	97-2 \pm .2	21-0 \pm .9
Champion	522	12	23S	1E	4500	5-30 \pm .6	87-6 \pm .6	10-1 \pm .1
Charlton Lake	327	23	21S	6E	5750	No Measurement	36-6 \pm .6	48-4 \pm .4
Hogg Pass	351	24	13S	7 $\frac{1}{2}$ E	4755	3-31 \pm .5	111-5 \pm .5	45-8 \pm .8
Horseshoe Lake	593	23	9S	8E	5050	4-6 \pm .3	126-9 \pm .3	35-8 \pm .4
McKenzie	531	35	15S	7 $\frac{1}{2}$ E	4800	3-28 \pm .1	12- $\frac{1}{2}$.1 \pm .1	46-6 \pm .6
Marion Forks	553	28	11S	7E	2730	5-31 \pm .1	26-1 \pm .1	10-4 \pm .4
Mary's Peak	5 $\frac{1}{2}$ 1	21	12S	7 $\frac{1}{2}$ E	3620	3-29 \pm .1	33-7 \pm .7	13-2 \pm .2
Santiam Junction	552	14	13S	7E	3990	3-31 \pm .1	61-3 \pm .3	25-4 \pm .4
Waldo Lake	521A	15	21S	6E	5500	3-28 \pm .1	85-1 \pm .1	29-0 \pm .9
INTERRIOR DRAGNAGE								
SILVER LAKE								
Silver Creek	942	25&26	29S	15E	4900	4-1 \pm .1	0-0 \pm .0	0-0 \pm .0
CHENAUCAN RIVER								
Mill Creek	922	1	34S	17E	6200	3-26 \pm .1	23-4 \pm .9	1-3 \pm .3
								11-0 \pm .0
								9 \pm .2

OREGON SNOW SURVEYS, APRIL, 1948

DRAINAGE BASIN and SNOW COURSE	LOCATION						SNOW COVER MEASUREMENTS					
	Number or State	Sec.	Twp.	Range	Elev.	Survey (In.)	Date of Survey	Snow Depth (In.)	Water Content (In.)	Same Approx. Date	Years of Record	Av. Water Content (Inches)
							1948	1947	1946	Past Record		
HARVEY BASIN												
Deer Creek	973	17	36S	26E	6670	3-26	18.0	5.8	0.0	9.5	8	6.8
Fish Creek	952	4	33S	33E	7900	4-1	79.5	25.1	20.6	-	8	23.3
Hart Mountain	971	1	36S	25E	6350	3-30	11.1	5.7	0.0	0.0	9	1.5
Idylwild Camp	961A	33	20S	31E	5200	3-31	12.8	4.8	0.0	5.8	17	2.9
Izee Summit	964	28	16S	29E	5293	3-29	28.0	10.1	1.6	8.9	12	6.5
Rock Spring	134	23	18S	32E	5100	3-31	16.0	5.0	0.0	5.1	12	4.1
Silvies	951	35	32S	33E	6900	3-31	45.5	15.3	8.6	-	10	13.1
Snow Mountain	965	1	19S	26E	6300	3-28	49.6	19.0	9.7	17.7	4	12.0
Starr Ridge	247B	20	15S	31E	5150	3-29	16.8	5.9	0.3	7.5	12	3.6
GUANO LAKE												
Bald Mountain	Nev.	17	45N	21E	6720	4-1	6.8	2.2	0.0	Trace	8	2.4
Guano Creek	972	13	36S	25E	6480	3-3C	18.3	5.9	0.0	7.9	8	6.0
WARNER LAKE												
Camas Creek	911A	5	39S	21E	5720	3-29	25.6	8.8	2.4	13.6	9	8.6
Umpqua River												
Champion	522	12	23S	1E	4500	3-30	87.6	36.6	10.1	43.4	9	20.7
Diamond Lake	743	29	27S	6E	5315	3-26	67.8	25.6	12.7	35.9	19	17.0
N. Umpqua nr. Lake Creek	742	19	26S	6E	4215	3-27	40.5	14.8	2.4	20.8	11	8.8
Whaleback	7217	3	31S	2E	5140	4-4	106.7	35.0 ^a	20.3	-	10	31.1
Windigo Pass	744	20	25S	6E	5800	3-27	118.4	43.6	New Snow Course			

a - Partly Estimated



OREGON SNOW SURVEYS, APRIL 1948

DRAINAGE BASIN and SNOW COURSE	Number or State Sec.	Twp.	Range	Elev.	Survey	Date of Survey	Snow Depth (In.)	SNOW COVER MEASUREMENTS			
								1948	1947	1946	Past Record
ROGUE RIVER											
Althouse	7216	17	41S	7W	4400	4-1	10•4	3•5	0•0	6•1	11 6•7
Annie Spring	831	19	31S	6E	6018	3-31	105•7	46•9	34•4	69•3	15 42•0
Big Red Mountain	729	31	40S	1W	6500	3-30	64•1	20•5	19•3	30•3	12 28•3
Billie Creek Divide	722	30	36S	5E	5300	3-29	80•4	29•0	11•1	36•6	17 22•1
Fish Lake	725	3	37S	4E	4865	3-27	45•0	13•8	0•5	19•0	14 11•9
Grayback Peak	727	9	40S	5W	6000	4-3	42•6	14•6	7•1	28•2	12 24•4
Hobart Lake	7221	17	40S	3E	5010	3-30	17•2	5•3	New Snow Course		
Hyatt Prairie Reser.	723	15	39S	3E	4900	3-29	39•4	12•3	0•0	13•2	15 7•7
Little Red Mountain	7210	25	40S	2W	6500	3-30	51•3	17•9	17•2	26•0	12 21•8
Park Headquarters	838	8	31S	6E	6450	3-31	128•7	49•8	42•4	75•3	4 58•4
Scragg Mtn. (Calif.)	7220	9	47N	10W	6200	4-1	50•5	21•7	17•4	-	6 20•0
Seven Lakes No. 1	7211	3	34S	5E	6800	3-30	109•4	37•2	33•1	60•2	12 54•0
Seven Lakes No. 2	7212	26	33S	5E	6200	3-30	91•3	33•1	25•0	58•0	12 40•6
Silver Burn	7219	30	30S	4E	3720	4-1	29•0	11•2	0•0	17•8	11 8•2
Siskiyou Summit	728	17	40S	2E	4630	3-27	13•7	4•4	1•1	3•2	12 3•2
South Fork Canal	7218	12	33S	3E	3500	4-1	0•0	0•0	0•0	0•0	11 0•7
Wagner Butte	7213	1	40S	1W	6900	3-26	62•5	18•8	15•4	18•7	13 16•1
Whaleback	7217	3	31S	2E	5140	4-4	106•7	35•0 ^a	20•3	-	10 31•1

KLAMATH LAKE BASIN

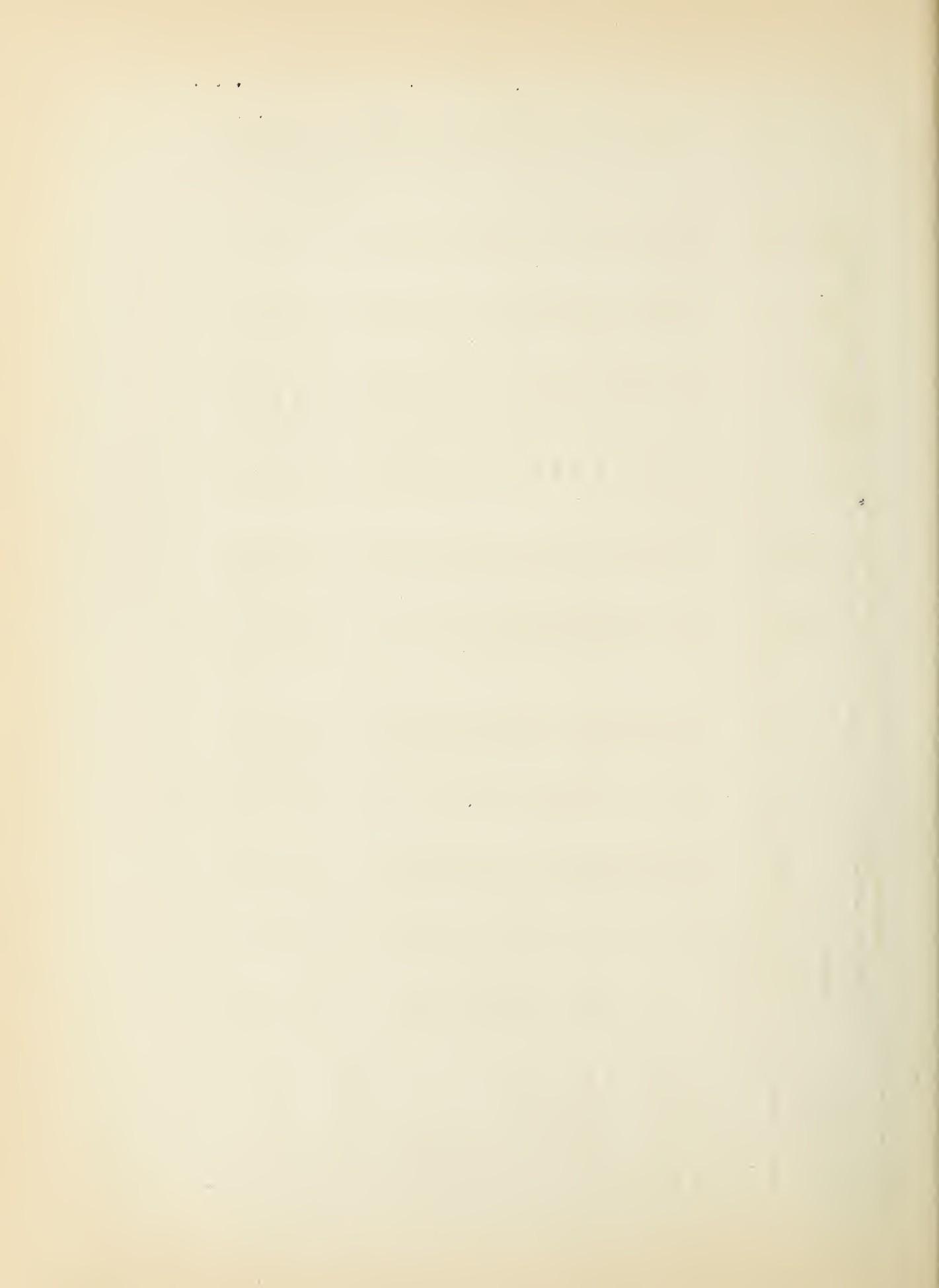
Annie Spring	831	19	31S	6E	6018	3-31	105•7	46•9	34•4	69•3	15 42•0
Beatty 2/ Billie Creek Divide	22	36S	12E	4300	3-31	0•0	0•0	0•0	0•0	0•0	21 0•0
Bly 101 Ranch 2/ Chemult No. 1	722	30	36S	5E	5300	3-29	80•4	29•0	11•1	36•6	17 22•1
Chiloquin 2/ Crowder Flat (Calif.)	22	35S	14E	4800	3-31	0•0	0•0	0•0	0•0	0•0	20 0•0
Crystal 2/ 2/ Water Content determined by melting a measured sample (The California Oregon Power Co. Station).	834	21	27S	8E	4760	4-1	16•9	7•3	0•0	16•6	11 6•8
	34	34S	7E	4187	3-31	0•0	0•0	0•0	0•0	0•0	20 0•1
	30	47N	11E	5200	3-28	1•0	0•5 ^a	0•0	0•0	0•0	8 0•0
	26	34S	6E	4200	3-31	10•0	4•5	0•0	9•5	18 4•2	

a - Partly Estimated

OREGON SNOW SURVEYS, APRIL, 1948

DRAINAGE BASIN and SN.C. COURSE	Number or State Sec.	Twp.	Range	Elev.	LOCATION	Date of Survey	Snow Depth (In.)	Water Content (In.)	SNOW COV'LK MEASUREMENTS		
									Same approx. Date	Years of record	Past Record Av. later Content (Inches)
						1948	1947	1946			
KLAMATH LAKE BASIN (Cont'd.)											
Fort Klamath 2/ Harriman Lodge 2/ Hyatt Prairie Reser.	723	22	33S	7 $\frac{1}{2}$ E	1500	3-31	0.0	0.0	0.0	21	0.9
		3	36S	6E	4200	4-1	0.0	0.0	0.0	20	0.8
		15	39S	3E	4900	3-29	39.4	12.3	0.0	13.2	7.7
Kirk 2/ Lake of the Woods 1		1	33S	7E	4533	3-31	0.0	0.0	0.0	18	1.7
		11	37S	5E	960	3-31	27.9	8.0	1.7	13.8	11
Park Headquarters	838	8	31S	6E	6450	3-31	128.7	49.8	42.4	75.3	4
Quartz Mountain	811	2	38S	16E	5320	3-28	11.8	4.3	0.0	8.4	3.8
Quartz Mountain 2/ Seven Lakes No. 1		33	37S	16E	550 $\frac{1}{2}$	5-31	12.0	4.5	Trace	8.5a	4.4
		3	34S	5E	6800	3-30	109.4	37.2	33.1	60.2	12
Seven Lakes No. 2	7212	26	33S	5E	6200	3-30	91.3	33.1	29.0	58.0	12
Strawberry	837	4	40S	16E	5600	4-7	25.9	8.3	2.8	-	7
Summer Rim	841	15	33S	16E	7200	3-29	50.1	14.8	10.1	32.8	11
Sun Mountain	836	22	32S	7 $\frac{1}{2}$ E	5350	4-1	53.5	18.3	15.4	42.9	11
Taylor Butte	842	16	33S	11E	5100	3-30	4.2	2.0	0.0	8.1	3.0
Yamgy 2/		20	31S	11E	4600	3-31	0.0	0.0	0.0	1.5	0.5
GOOSE LAKE BASIN											
Camas Creek	911A	5	39S	21E	5720	3-29	25.6	8.8	2.4	13.6	9
Quartz Mountain	811	2	38S	16E	5320	3-28	11.8	4.3	0.0	8.4	3.8
Quartz Mountain 2/ Strawberry		33	37S	16E	5504	3-31	12.0	4.5	Trace	8.5a	4.4
		4	40S	16E	5600	4-7	25.9	8.3	2.8	-	7

a - Estimated
2/- Water content determined by melting a measured sample (The California Oregon Power Co.'s Station).



IRRIGATION WATER SUPPLY FORECASTS

SEASON OF 1948

- Foreword -

Measurements of snow depth, density and water content were secured on all Oregon snow courses between March 22 and April 7. The usual soil moisture determinations made at 12 stations on the headwaters of important streams were not obtained this year, due to reductions in operational funds.

Water forecast committee meetings were held in eight important irrigated regions of the State during the period March 30 to April 7, as follows: Hood River for Northcentral Oregon; Pendleton for Umatilla-Walla Walla Basins; Enterprise for Northeastern Oregon; Ontario for Southeastern Oregon; Burns for John Day and Harney Basins; Bend for Central Oregon; Lakeview for Southcentral Oregon; Medford for Southern Oregon. Most of the 38 cooperating agencies were represented at these discussions.

Each committee's report, outlining the irrigation water supply prospect for 1948 in each area, is reproduced herewith. Modifications of these forecasts may be required later in accordance with excessive deviations of precipitation and temperature from normal during the runoff season.

Forecasts

Northcentral Oregon

Above average snows in the Hood River and White River watersheds will result in good supplies of irrigation water throughout this region, although a few lands will experience some late season deficiencies where dependent upon sustained streamflow.

White River below Tygh Valley will flow 160,000 acre feet between April first and September thirtieth this year to surpass the 103,070 acre feet received last year. This flow will be three times greater than the ten-year average of 52,830 and will be ample for lands served directly from this source. Lands served from Rock Creek and Badger Reservoirs will have an adequate supply since these reservoirs are both full. The Juniper Flat area served by Clear Creek and Frog Creek will have good supplies this year. Lands in the Wamic-Maupin areas will probably have sufficient water for the second irrigation. Crop lands here are well saturated -- wet to bed rock.

Fifteen-mile, Eight-mile and Five-mile Creeks will produce better supplies than last year with regulation expected in The Dalles area about July 20. Mill Creek will go on regulation a little earlier than this. Orchard lands in The Dalles area are saturated with water down six or seven feet. Some of the dormant spraying has been delayed by excessive wetness.



Sherman County wheat lands are also well saturated, with some ranchers pasturing new wheat because of heavy growth.

Hood River Valley lands will enjoy ample irrigation water supplies except for the Hood River Irrigation District which will possibly have some late season shortages. This district depends upon the waters running off Mt. Defiance where snow cover is not so favorable. Some of this shortage will probably be alleviated by the extended use of sprinkler systems.

Flow of the West Fork of Hood River is forecast at 175,000 acre feet for the next six months or twice as much as average which is 82,020 a.f. This is more than was obtained in 1946.

The Middle and East Forks of Hood River usually flow about 20 and 30 percent of the West Fork, respectively, or about 35,000 and 53,000 acre feet this year. The flows will be approximately 4 times as great as those of 1941, the worst year of record. Valley lands are well soaked -- almost too wet in some places.

Umatilla-Walla Walla Basins

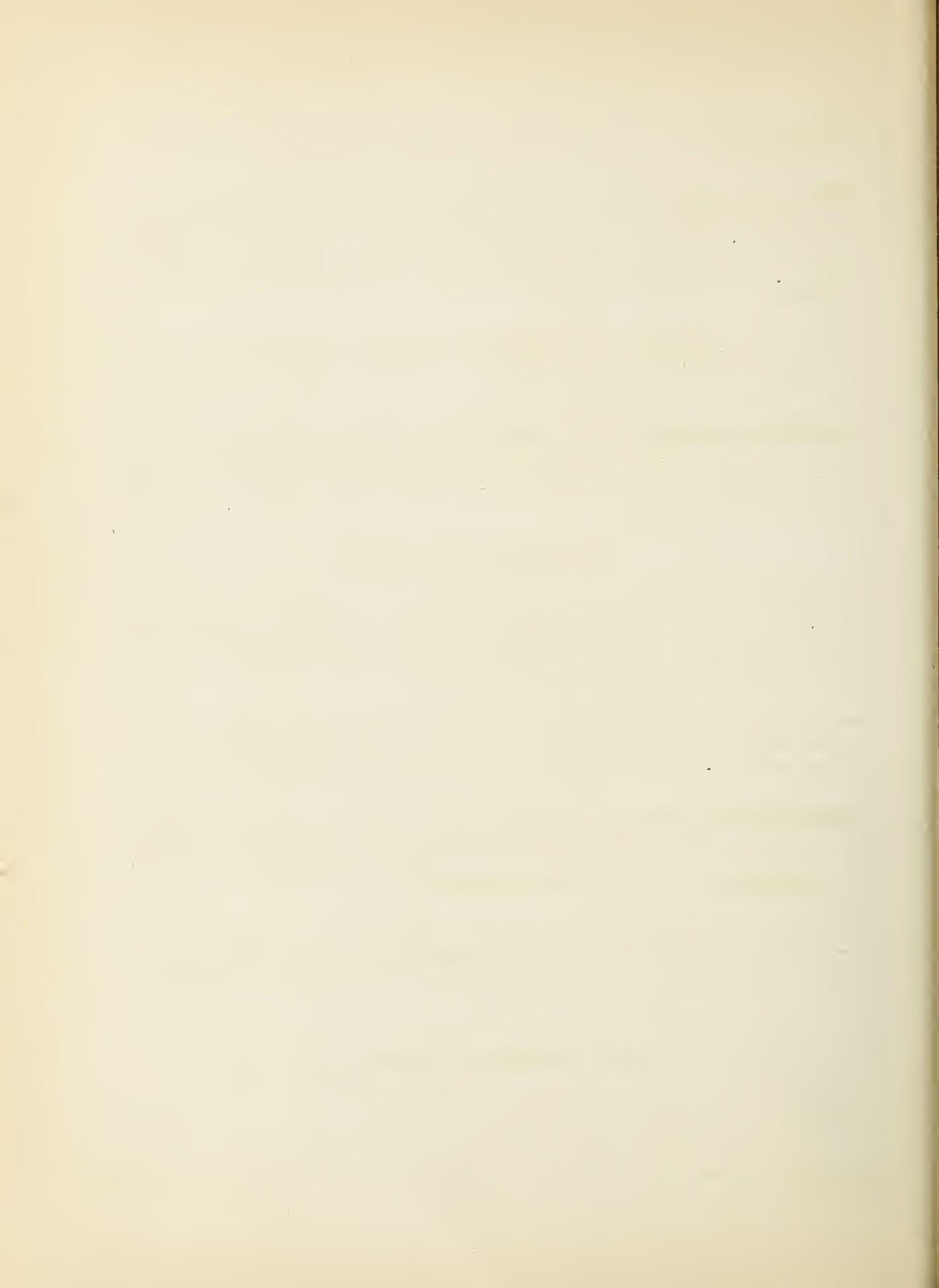
The snow-cover in the higher elevations of these watersheds is from 30 to 90 percent greater than average and is very nearly equal to the record snows of 1946. Resultant streamflow will be considerably above average and with greater than normal reservoir supplies will provide ample water for all irrigated lands in this region.

Crop land soils are well saturated as are also the soils under the snows in the mountains. Practically no frost remains in the ground. Wheat lands, summer fallow and stubble, are soaked -- about like in 1943.

The South Fork of the Walla Walla River is forecast to flow 79,000 acre feet for the 6 month period April 1 - September 30. This flow will be 26 percent greater than average and slightly better than the 1946 flow. The Hudson Bay area and the Burlingame Ditch will be short of water after about June 15, as is usual.

The flow of the Umatilla River above Meacham Creek near Gibbon will be 110,000 acre feet for the six months irrigation season -- 40 percent above average and slightly better than 1946. This flow has been exceeded only in 1943 and 1933.

The main stem of the Umatilla River at Pendleton will flow 200,000 acre feet in the next 6 months or 30 percent greater than average. 1932, 1933 and 1943 are the only years which had greater flow at this station. All lands served direct from the Umatilla River will have adequate water supplies this year. Greater use is being made each year of the waters of the main river -- some 5000 or 6000 acres are now irrigated. Cold Spring Reservoir is now full to its capacity of 50,000 acre feet and will furnish ample water for lands of the Hermiston Irrigation District.



McKay Reservoir now has 71,000 acre feet in storage and can easily fill. The Stansfield and Westland areas will also have ample water for this season. The West Extension is served by floodwaters and by return flow from the above three irrigation districts and will likely have a satisfactory water supply. McKay has been by-passing water the entire month. McKay Creek is forecast to flow 31,000 acre feet in the next 6 months or about 48 percent greater than average.

Birch and Butter Creeks will furnish considerably more water than last year with the Birch flow probably increasing to half again as much water as in 1947. Snow at Arbuckle Mountain contains 12.5 inches of water this year as compared with only 3.7 inches last year and at Lucky Strike 15.3 inches this year compared to 10 inches last year.

Willow Creek in Morrow County will carry probably twice as much water as last year to the lands which it serves.

Northeastern Oregon

Mountain snow-cover in Northeastern Oregon is generally well above average in water content with most survey points carrying nearly as much as in 1946. All snow courses measured showed the water content of the snow to be considerably above that of last year and resultant stream flow will be well above normal with good water supplies in sight for all irrigated lands. Soils are well saturated throughout the area.

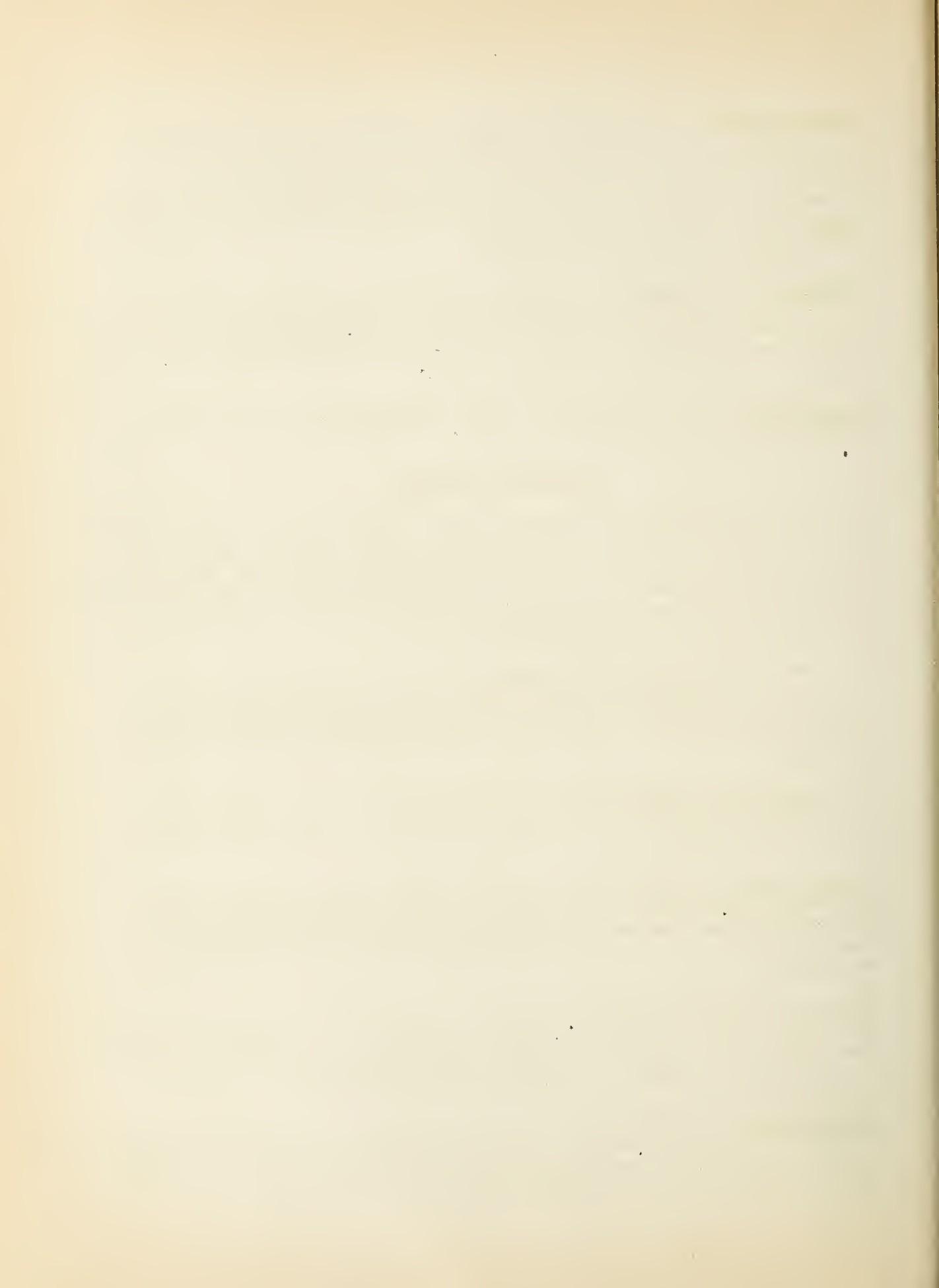
The flow of the Imnaha River at Imnaha will reach 350,000 acre feet for the April 1 - September 30 period and will be 24 percent greater than average and nearly 10 percent greater than in 1946. This flow will be much greater than last year's flow and will furnish ample water for irrigation.

The Wallowa River, East Fork will flow 11,300 acre feet in the next 6 months. This flow will be 6 percent greater than average and slightly less than in 1946.

Wallowa Lake reservoir now stores about 12,500 acre feet (17,750 a.f. from State Engineer's records) which is considerably below the 21,000 10 year average. However, with the inflow to the Lake expected to be about equal to that of 1946, no water shortages are to be expected from this source.

Hurricane Creek will deliver 44,500 acre feet during the irrigation season or 7 percent more than average. This is less than in 1946, but will furnish ample water except to the Upper Alder Slope ditch which usually is short of water by about July 15.

Lostine River will flow 130,000 acre feet, or 14 percent more than average in the next 6 months. This is slightly less than in 1946 but will be ample for all lands served. Silver Creek flowing into Lostine River will probably run out before the end of the irrigation season.



Bear Creek will discharge 65,000 acre feet this summer with an average flow and will furnish good supplies up until nearly the end of the season.

The Grande Ronde Valley will have much more water than last year and even more than in 1946. The Grande Ronde River near La Grande is forecast to flow 220,000 acre feet compared with 180,000 in 1946 and an average of 156,000 acre feet. No shortages from this source are expected. Catherine Creek will flow 80,000 acre feet for the same period -- 23 percent greater than average and some better than the 76,000 flow of 1946. No shortages are expected here either. Ladd Creek will have greater than average flow but will come off early as usual, leaving its lands short in the late season.

Baker Valley should have ample water supplies this year. The Powder River as measured at Salisbury should flow 60,000 acre feet during the six months April 1 - September 30. This flow will be 5 percent greater than average but less than the 76,400 acre feet obtained in 1946. No discharge records are available for North Powder River but the snow cover at Anthony Lake and Summit Springs is well above average and above last year. Flow of this stream should be better than last year.

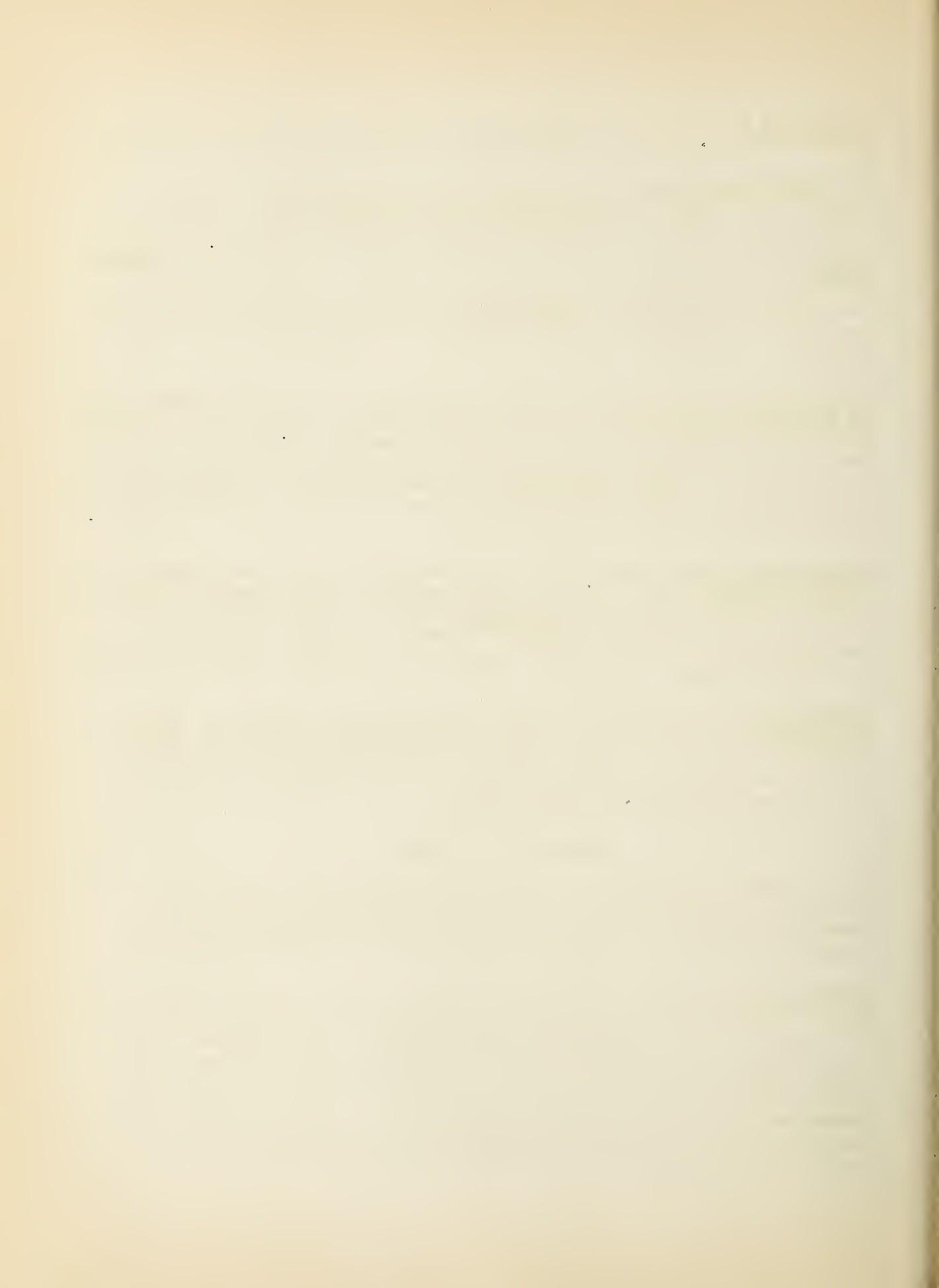
Lower Powder River Valley lands are served from water stored in Thief Valley Reservoir which is full as usual and will furnish adequate supplies. Lands served from Eagle and Pine Creeks will have ample water supplies since snow cover in these watersheds is about 98 to 114 percent average and much greater than last year. There are no available streamflow records for these streams.

Burnt River lands can expect adequate water supplies this year. Unity reservoir now has 12,000 acre feet in storage and can expect an inflow of 40,000 acre feet in the next 6 months. This inflow will be 16 percent greater than average and greater than last year's flow. No shortages are expected on North Fork lands this year.

Southeastern Oregon

For the second consecutive year streamflow in Malheur county will be critically low, discharging 34 to 60 percent of average. Only those lands served from the irrigation reservoirs will have good supplies this season.

Owyhee reservoir with a useable capacity of 715,000 acre feet, now stores 397,930 acre feet. This is the lowest storage figure for this date since the project was built. Reservoir inflow during the next 6 months is forecast at 150,000 acre feet, only 34 percent average and less than last year's inflow figure of 176,560 acre feet. Sufficient water is available for all lands served but it may become necessary later to allot the water. By pumping 80,000 acre feet of water from the Snake River, it may be possible for the project to maintain a carry-over of 130,000 acre feet in the reservoir for next year.



Jordan Valley lands should enjoy a much better season this year than last. The newly enlarged feed canal for Antelope reservoir has made possible an increase in storage in that reservoir.

Storage in Warmsprings and Agency Valley reservoirs is 29 and 88 percent average, respectively, with less storage at this date than in any year since 1937. The flow of the Malheur River will add to these stored amounts of water.

Malheur River, Middle Fork is forecast to discharge 40,000 acre feet April through September. This is only 52 percent average, but it is 17 percent more than was received last year. North Fork of Malheur River will flow 36,000 acre feet this year as compared to an average discharge of 60,000 for the irrigation season.

The Vale-Oregon and Warm Springs Irrigation Districts will be able to furnish at least 3 acre feet of water for each acre served. Favorable conditions of snow-melt and runoff together with careful use of water supplies by ranchers may make it possible to increase the total supply to the land somewhat.

Bully Creek has far greater snow supplies than last year but water is already needed with very little discharging as yet. Total supply from this source should be better than usual but short late in the season.

Willow Creek Reservoir No. 3 with a capacity of 26,000 acre feet is reported to be about one third full with probability that supplies will be adequate for the 2600 acres usually irrigated from this source. Lands depending upon natural flow of this stream will have more water than last year but late season shortages.

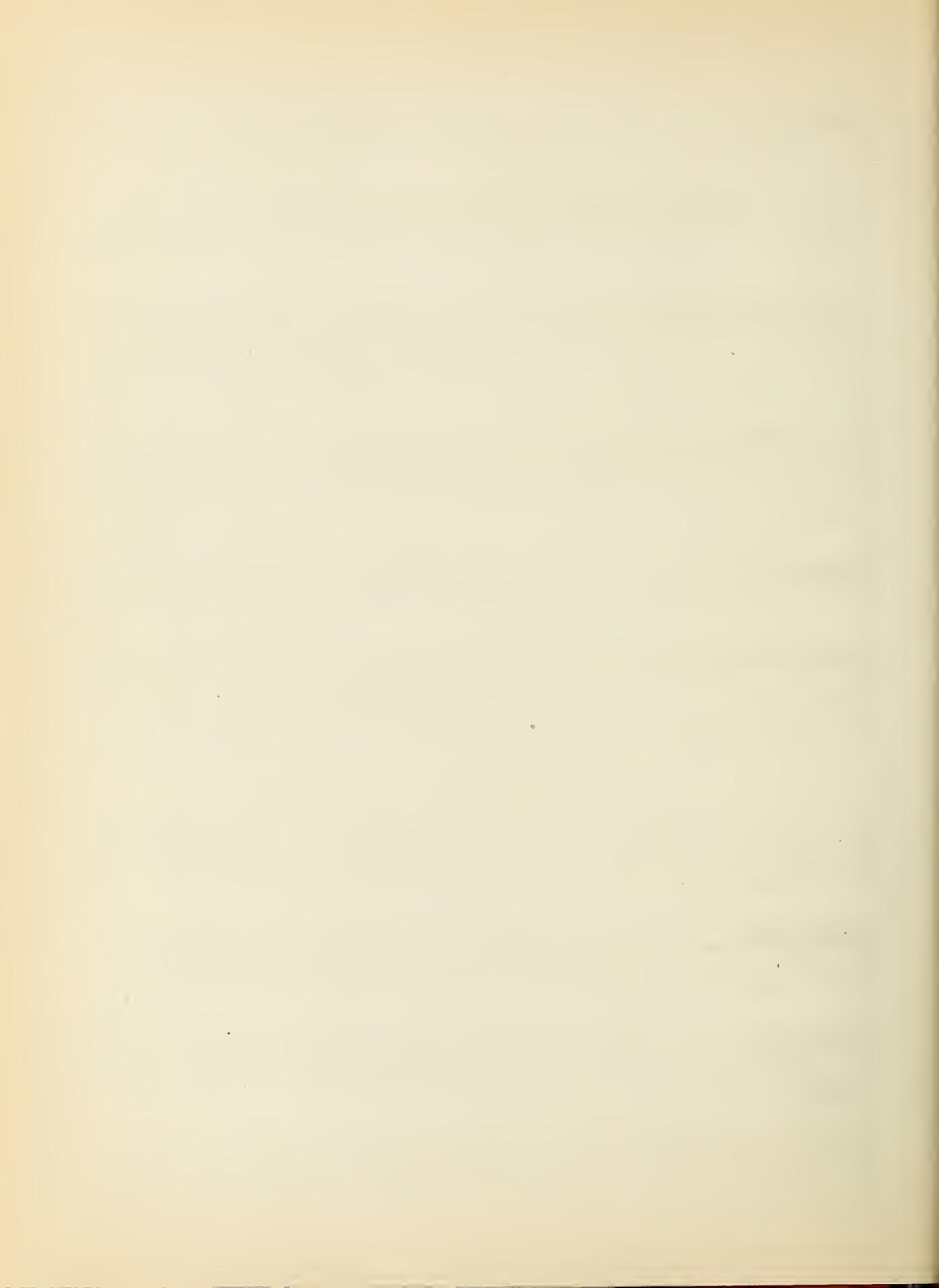
Harsney Basin

Hay lands of Harsney Basin as well as high watershed soils are extremely wet. Snow cover in the mountains is greater than average and better than last year. Streamflow will be adequate for irrigation except in the Catlow Valley area.

Silvies River is forecast to flow 55,000 acre feet during the next 6 months as compared with 47,700 last year and with the average of 88,400 acre feet. No great deficiencies in supply are foreseen for lands irrigated from this source.

Silver Creek will provide better supplies than last year, probably about the same as in 1946. Snow cover on the upper watershed is very good this year. Snow Mountain has 19.0 inches of water this year as compared with 9.7 inches last year.

Donner und Blitzen River near Frenchglen will provide ample water this year discharging 75,000 acre feet during the April 1 - September 30 period. This flow will be 14 percent greater than average and will be similar to that received in 1943.



Trout Creek lands in southern Harney County will receive less than average water but should be better than last year.

Catlow Valley is already deficient in water and the outlook is not good this year. Home Creek, Three-mile and Skull Creeks will all furnish short supplies. Rock Creek will be considerably improved over last year.

John Day Basin

Mountain snow-cover at all elevations is greatly above average this year with a new record established at the Olive Lake snow course where 63.4 inches of snow was found to contain 30.0 inches of water. Crop land and watershed soils are well soaked and runoff will be ample for irrigation needs.

John Day River, North Fork near Dale will flow 350,000 acre feet during the next 6 months as compared to 216,000 acre feet average. This will be 62 percent above average.

John Day River, Middle Fork at Ritter will discharge 130,000 acre feet or 21 percent greater than average during the April - September period.

The main John Day River at Prairie City will flow 45,000 acre feet, as compared with 46,400 a.f., which is the average flow. Strawberry Creek, tributary to the main John Day River, will discharge 7,500 acre feet this year as compared with 7,900 acre feet last year and 7,800 acre feet average.

John Day River, South Fork, has a good flow ahead with snow cover at Izee Summit now holding 10.5 inches of water, compared to 1.6 inches last year this date.

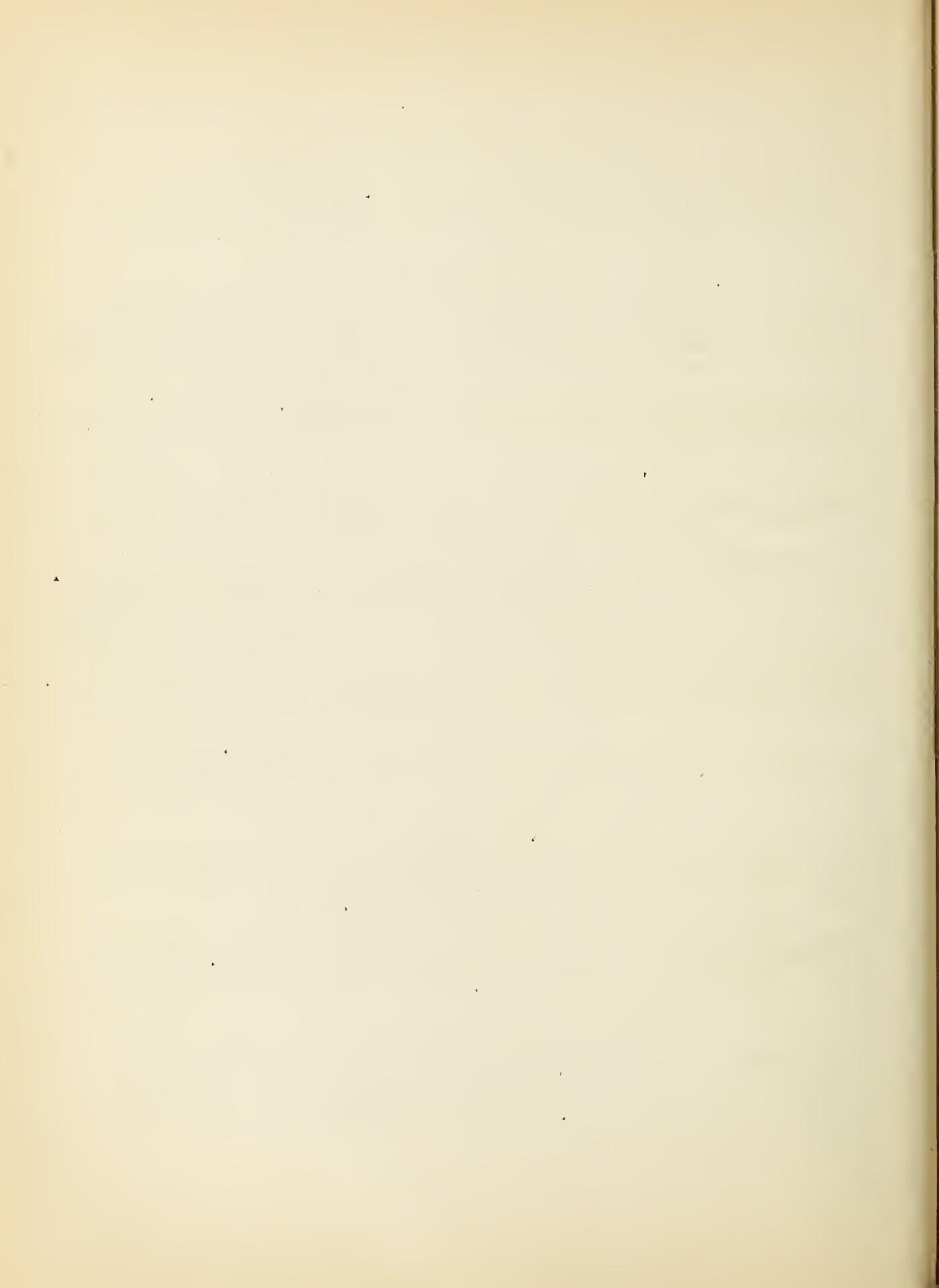
No shortages of water are expected anywhere in the John Day Basin except in some small tributaries.

Central Oregon

Another good water year is assured for Central Oregon with above average snows in the mountains and good reservoir supplies. The watersheds are well wetted and snow-cover is far better than last year.

Ochoco Reservoir now stores 30,960 acre feet and can expect an inflow of 20,000 more during the 6 summer months. This inflow to come is more than double that of last year and will provide a total water supply adequate for the Ochoco project.

Crooked River will discharge 150,000 acre feet in the next 6 months as compared with the average flow of 111,000 acre feet. This flow will be greater than that of last year. Beaver and Rager Creeks will also produce good water supplies this season from the excellent snow-mantle on their watersheds.



Water supplies to the Arnold, Central Oregon, Deschutes County Municipal, North, and Swalley Canals will be adequate this year to meet all needs.

Deschutes River above Crane Prairie reservoir (below Snow Creek) is forecast to flow 62,000 acre feet as compared with 64,500 last year and the ten year average of 46,800 a.f.

Total Inflow to Crane Prairie Reservoir will reach 110,000 acre feet during the April - September period. This will be 12 percent above the average flow.

Crescent Lake Inflow will be 17,000 acre feet for the 6 summer months or 29 percent above average, and almost as much as the 19,200 a.f. received last year.

Flow of Odell Creek near Crescent will be 31,000 acre feet as compared with 28,800 last year and the average of 24,800 a.f.

Little Deschutes River near Lapine will produce 80,000 acre feet during the irrigation season. This flow will be 17 percent above average and greater than the 64,900 received last year.

The entire Deschutes River at Benham Falls will discharge 550,000 acre feet for the season, as compared with 495,000 last year and an average flow of 445,700 acre feet.

Wickiup Reservoir with a capacity of 180,000 acre foot now has in storage 149,820 acre feet which will be more than enough to adequately supply the 28,000 acres that will be irrigated near Madras this year.

Tumalo Creek will discharge 45,000 acre feet this season. Slightly more than last year and better than the average discharge of 42,800 acre feet.

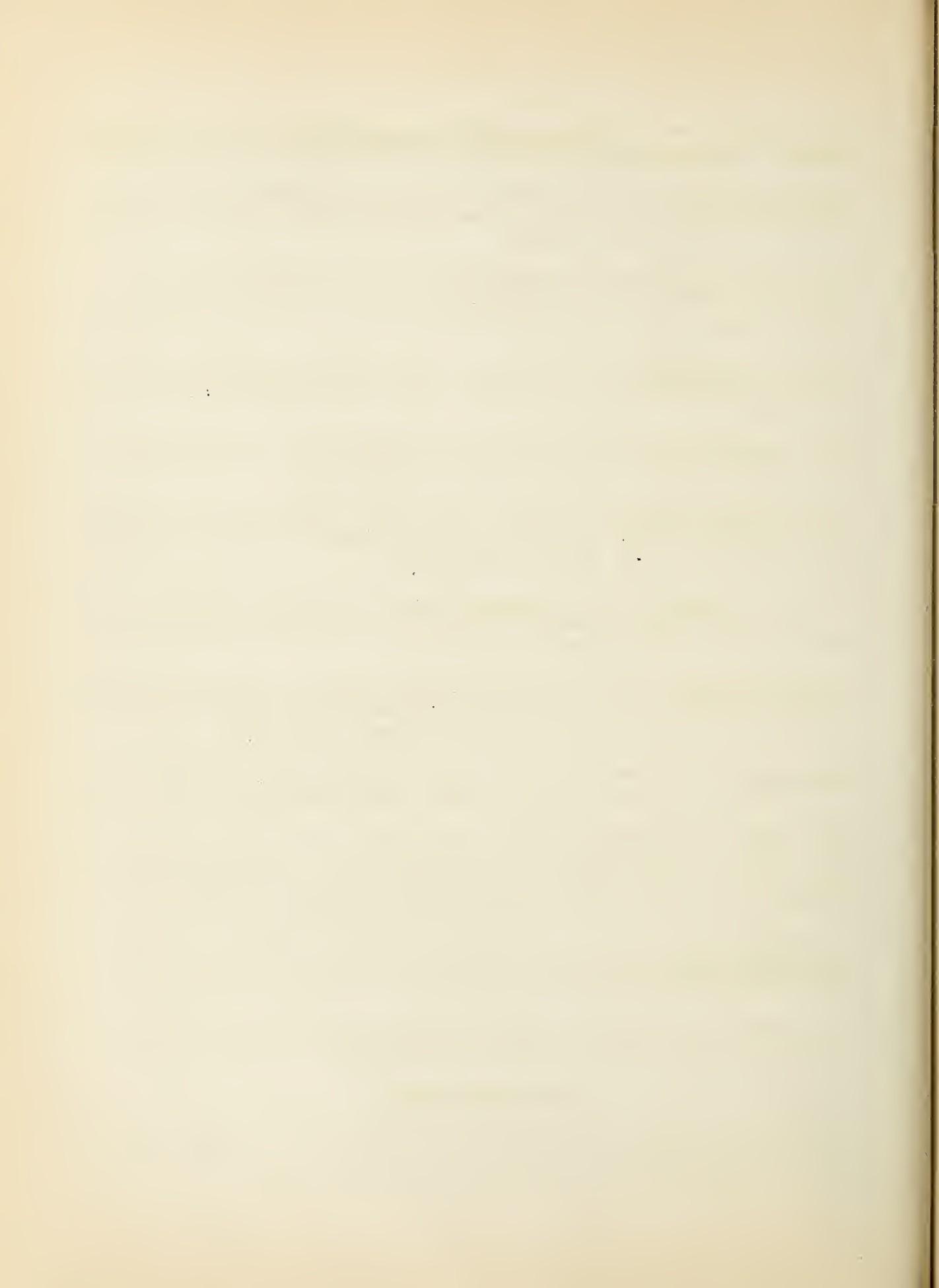
Squaw Creek will supply adequate water for the lands served by it, except that the Plainview-McAllister ditch will have very little water. Squaw Creek will flow 50,000 acre feet this season as compared with the average of 45,000 and with 45,700 acre feet received last year.

The Lonepine area will have adequate water supplies this year and the TROUT CREEK - HAY CREEK area will be better than last year, but not as good as 1946.

Range conditions throughout Central Oregon are backward, but very promising with soils well saturated in all regions.

Southcentral Oregon

Storms during March have greatly increased prospects for a good water year in this portion of the State. There will be some shortage in late season in the Silver Lake and North Warner Valley areas.



Silver Lake area has more water in sight than last year at this same date. Thompson Valley reservoir storage is not known, but the good snow-cover at high elevations should add more. Summer Rim snow course has 14.8 inches of water stored in the snow this year, compared with 10.1 inches last year. Silver Creek snow course reported no snow both years, at its low elevation.

Summer Lake Basin will have good water supplies this year with snow-cover on the Rim increased over last year.

Chewaucan River will flow 60,000 acre feet during the next three months (April - June). This will be 91 percent average but will be way ahead of last year's flow of 32,900 acre feet. This will be ample water for the usual irrigation.

Goose Lake Valley lands served from Drews Creek reservoir now have 31,000 acre feet of water in storage which is 82 percent of last year and 53 percent average. This will be increased by a good inflow in the next few months and will form an adequate supply for all lands served by it. The smaller creeks of the valley will flow much heavier than last year and should provide enough for a good hay crop. Cottonwood reservoir now holds 1,256 acre feet and will probably fill. Strawberry snow course has 25.9 inches of snow with 8.3 inches of water which is way above the 2.8 inches recorded last year.

Warner Valley lands are well saturated but the south end will receive more water than the north end. Deep Creek will discharge 50,000 acre feet for April - June or 82 percent normal and a great deal more than was measured in 1947. Twenty-mile Creek will also flow better than last year.

In the north end of the Valley, Honey Creek will flow better than last year, but shortages will be the rule unless this flow is sufficient to raise Hart Lake above its extreme low level. Water is usually pumped from Hart Lake onto about 6000 acres of land.

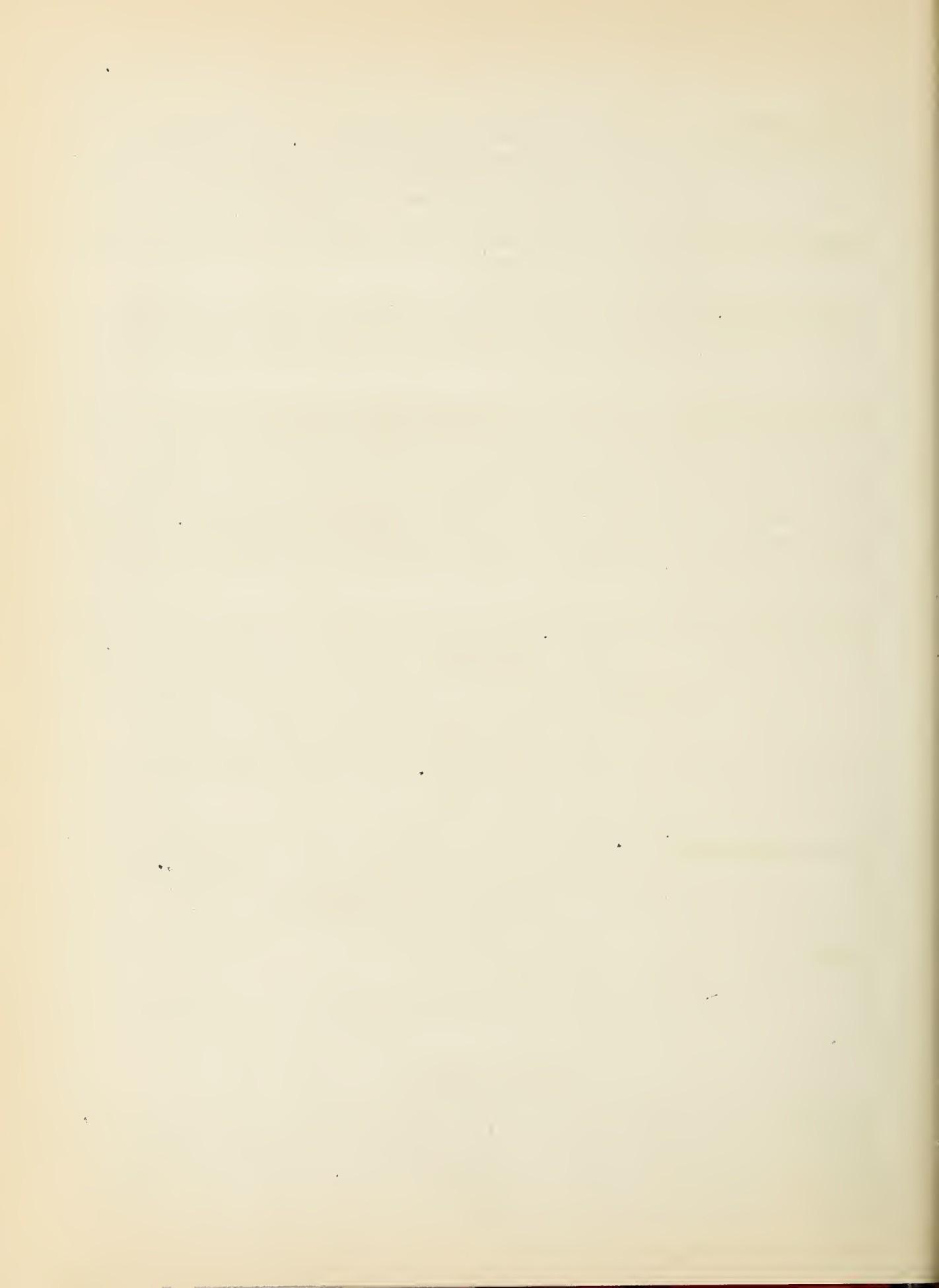
Hart Mountain Refuge has received heavy storms in March with snow-cover now containing from 3.7 inches to 5.8 inches of water as compared with none last year. Range land is well soaked and Rock Creek is already flowing a good stream. Last year flow stopped the third week of May.

Guano Creek watershed now has 5.9 inches of water in the snow-pack and will provide much needed water supplies.

Desert water-holes are filling but are generally not as full as is desirable.

Southorn Oregon

Irrigation water prospects in this intensively cropped area have increased from "critically short" to "good" during the past two months. Mountain snow-cover has increased greatly during March to its present condition. Snow-stored water is now above average on nearly all snow courses in this area and is somewhat above last year's figures.



Upper Klamath Lake has 369,320 acre feet in storage and will have an inflow during the next 6 months of 421,000 acre feet which is 85 percent of the 10 year average. Inflow for this period last year was 318,200 acre feet.

Sprague River will flow 195,000 acre feet or 82 percent of average and much better than last year's flow. No shortages are expected for irrigated lands served by this stream.

Williamson River is forecast to discharge 330,000 acre feet during the April - September period or 86 percent of average. This flow will be half again as great as the 1947 flow of 223,800 acre feet. Ample supplies for all lands are assured.

Clear Lake reservoir inflow to April 1 was 33,390 acre feet, 40 percent of the 10 year average. Inflow for April - September will probably be 14,000 acre feet or 34 percent of average. Storage as of April 1 was 152,430 acre feet, 50 percent average. This is ample water for this year's irrigation and will allow for a small hold-over for next year.

Gerber reservoir has 28,080 acre feet in storage now, 51 percent average. Inflow to April 1 has been 48 percent average and was 17,420 acre feet. Forecast is for 6,000 acre feet yet to come or 28 percent of average. Gerber will provide good supplies for the Upper Langell Valley if the water is used with real care. There will probably be no hold-over for the 1948 season.

Small reservoirs throughout Klamath County are probably filled about 80 to 90 percent of capacity.

Rogue River, North Fork above Prospect will flow 315,000 acre feet this season or 8 percent above average. Last year's flow was 248,000 acre feet.

Rogue River, Middle Fork, plus power canal, will discharge 60,000 acre feet April 1 - September 30 or 87 percent of average.

Rogue River, South Fork, above Imnaha Creek, is forecast to discharge 45,000 acre feet or 86 percent average for the six months ahead.

Rogue River below South Fork will discharge 645,000 acre feet in the irrigation season, or 101 percent of average.

Grants Pass Irrigation District will likely have sufficient water for all lands for the entire season. Low flow of the Rogue River at Savage Rapids Dam is not expected to drop below 870 c.f.s.

Bear Creek Valley lands will have sufficient water if summer melting of snow and precipitation are favorable.

Fourmile Lake reservoir now has in storage 2,371 acre feet and can expect an inflow of 7,200 acre feet this summer.



Fish Lake reservoir is storing 3,657 acre feet and will probably have an inflow of 1+,000 acre feet during the next six months.

Water supplies in the Medford and Rogue River Irrigation Districts come from the Fourmile Lake and Fish Lake sources and are considered sufficient to cover the needs for this year's irrigation.

Eagle Point Irrigation District will have ample water supplies from the Big Butte Creek this year.

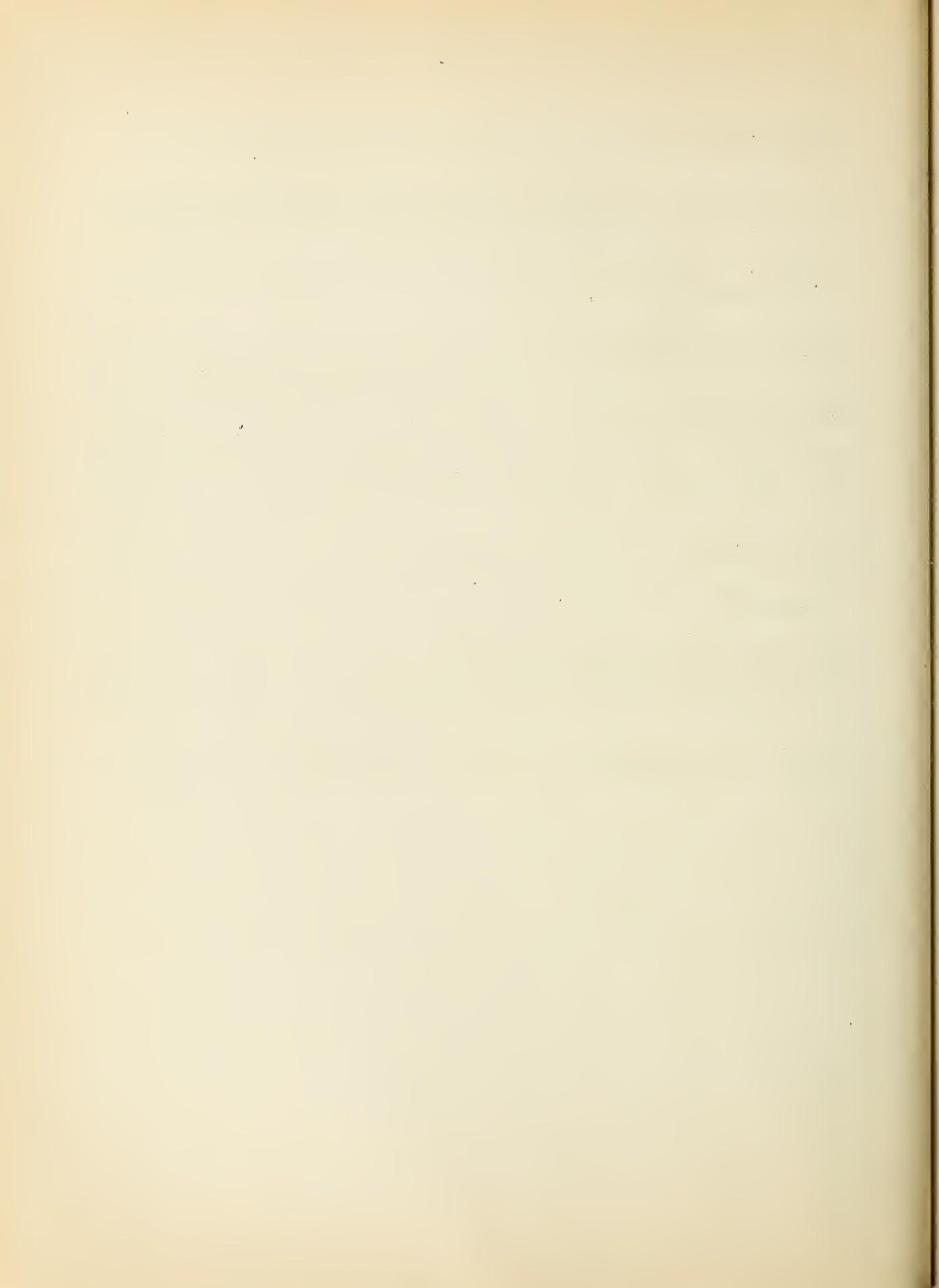
Talent Irrigation District will have more water than last year when all supplies were exhausted on August 16th. Hyatt Prairie reservoir now holds 3,800 acre feet and can expect an inflow of 6,000 more this summer. The Emigrant reservoir is full with 8,200 acre feet held in reserve and with the summer flow expected to be much greater than last year. The Talent District has 18,000 acre feet of water in sight, if summer conditions remain favorable. This is just barely enough water to get by and could become a short supply if unfavorable conditions develop.

Applegate River will flow 90,000 acre feet this season which will be 70 percent of average and better than last year.

Illinois River will flow 170,000 acre feet April through September or 90 percent of the ten year average flow.

Evans Creek, Grave Creek and Jump-off Joe will all have better flows than last year. Some late season shortages will occur, but good water supplies are to be expected generally in these areas.

Flow forecasts for Umpqua and Willamette River Basins are tabulated on page 3 of this report.



The following organizations cooperate in the Oregon snow survey work:

STATE

Idaho Cooperative Snow Surveys
Nevada Cooperative Snow Surveys
Oregon Agricultural Experiment Station
Oregon State Engineer and corps of State Watermasters
Oregon State Highway Engineers

FEDERAL

Department of Agriculture
Forest Service
Soil Conservation Service
Department of Commerce
Weather Bureau
Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Fish and Wildlife Service
Geological Survey
Indian Service
National Park Service
War Department
Army Engineer Corps

PUBLIC UTILITIES

California-Pacific Utilities Company
Portland General Electric Company
The California Oregon Power Company

MUNICIPALITIES

City of Baker
City of Corvallis
City of LaGrande
City of The Dalles

IRRIGATION DISTRICTS

Associated Ditch Companies
Central Oregon Irrigation District
Deschutes County Municipal Improvement District
East Fork Irrigation District
Grants Pass Irrigation District
Jordan Valley Irrigation District
Lakeview Water Users Incorporated
Medford Irrigation District
Ochoco Irrigation District
Rogue River Irrigation District
Talent Irrigation District
Vale-Oregon Irrigation District
Warmsprings Irrigation District

PRIVATE ORGANIZATIONS

Amalgamated Sugar Company
South Wasco Soil Conservation District
The Crag Rats

